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# Australian Orchid Review



AUTUMN 1988



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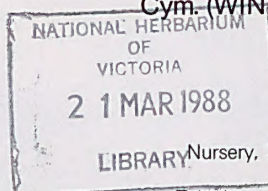


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## Cover Story

This orchid *Phalaenopsis* Cardinal 'Zuma Canyon' was awarded an AD/AOC at the 10th AOC Conference in Adelaide in 1986.

It was judged by the full AOC Judging Panel and granted the AOR Award of Distinction and the AOR Trophy for 1987.

Pictured is Mr George Withers accepting the AOR Trophy on behalf of Zuma Canyon Orchids Inc. of Malibu, California, USA from Mr Graeme Banks, President of OSNSW Ltd.

The presentation was made at the OSNSW Ltd Christmas Party.

# Australian Orchid Review

Volume 53 — No. 1

AUTUMN 1988

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C. Zuma Boyd 'Hohn's Pride' x C. Puppylove 'Jubilee'

First flowering seedling, July 1987 off a tiny plant. Carried 4 full sized blooms — top two  
were damaged and removed. Unusual feature — the two red lip markings do not meet in the  
centre of the lip. (Hybridiser — Hightae Plant Nursery).

## LOOKING FORWARD AND BACKWARDS

### — CYMBIDIUM BREEDING

By: Mrs Pat L. Greenfield of The Hightae Plant Nursery, 16 Coronation Street,  
Takapuna, Auckland 9, New Zealand.I read with interest the article written by  
Mr Robert W. Nicolle of Valley Orchids  
on "What makes a good stud?", which  
appeared in the Spring 1987 issue of this  
magazine.I was concerned to hear the Mr Nicolle  
does not advocate the use of *Cymbidium*  
Rincon 'Clarisse' and the like because  
they are old varieties and had been  
discarded for their various faults. All  
orchids have faults whether old or new. Ido agree however, that the same cross  
shouldn't be made twice. If superior  
progeny are produced, then by all means,  
they should be used to further the quality  
of cymbidiums. I do not agree that the  
parents should not be re-used; to remake  
the same cross — no, to use with other  
parents — yes.Some parents have well and truly stood  
the test of time, such as *Cymbidium*  
Wallara 'Gold Nugget' and *Cymbidium*



Borough Green 'Conference'. Not new orchids but in combination they produced the outstanding *Cymbidium* Jubilation cross. I believe that superior new seedlings should be crossed with some of the older varieties — for all their inherent faults, because their obvious outstanding features can be re-introduced and enhanced in later generations.

I agree that if a new seedling displays an exaggerated feature such as extreme vigour of growth or above average spiking ability, then providing other features are not grossly bad, it should be used in further breeding work.

I have two new seedlings that I have crossed together. one is *Cymbidium* Fanfare 'St Francis' x *Cymbidium* Wallara 'Gold Nugget' (Lambert Orchids cross), which was awarded an HCC on its first blooming in 1986. This is a large plant with a massive spike carrying up to 20 large, yellow blooms. It is vigorous in growth. An outstanding plant, but not free with its spikes. Another seedling, *Cymbidium* Chcolada 'Takapuna' (Lambert orchids cross), is not a very vigorous grower but it can carry up to 4 large spikes per bulb and up to 20 flowers per spike over 2 years. here we have a marriage of four top parents, C Fanfare 'St Francis', C Wallara 'Gold Nugget', C Zuma Boyd and C Hamsey 'The Globe'.

Not the most modern parentage but proven with the test of time. Fanfare does not seem to throw free blooming plants in most of its crosses but in conjunction with the free blooming properties of the C. Chcolada, it is to be hoped that some of the seedlings will combine the best of the mixed parentage and a quality result will ensue. This cross was done for exhibition type orchids. The wide lip of C. Hamsey should correct the rather pinched lip of C. Fanfare.

I have done some like crosses with parents which have similar traits. One such cross was C. Puppylove 'Jubilee' x C. Zuma Boyd 'John's Pride' and reversed. Both parents multi-spike over a 2 year period. Both have well spaced blooms on the spike and both are vigorous growers. I wasn't looking for an exaggerated feature on this occasion, but rather a reinforcing of several good points which could be used as a dominant feature in future crosses, such as good spikes, good bloom placement and similar multi-spiking habits.

It is also important in special crosses to reverse the mating. It does make a definite difference as to which is the seed parent. In the abovementioned cross, C. Puppylove 'Jubilee' used as the seed parent, yielded more vigorous seedlings than when C. Zuma Boyd was used as the seed parent. Used as the seed parent, C. Puppylove 'Jubilee' leaves vigorous

growing seedlings with good spikes and well spaced blooms as a dominant feature.

One of the seedlings of the above mating had two spikes on first flowering, was yellow in colour and had well spaced, well shaped blooms with a huge, wide, well marked lip. This in turn has been put across the 'old' C. Wallara 'Gold Nugget', thus combining the best of the old with the new.

Another excellent seedling, not of my crossing, but that of McBeans, is C. Western Rose 'Perfection' x C. Etta Barlow 'Opalescent'. The Etta quality of the seedling illustrated is outstanding, apart from the slightly narrow lip. Both parents are very old but can still yield excellent progeny. I will now be making careful matings of this with some of the latest varieties.

I also work with liliums and roses and have found that in selected instances, going back to just beyond the species stage, can re-infuse great vigour and good health.

Not all of the older varieties are still suitable for continued use. However, C. Rincon 'Clarisse', of which the author of your aforementioned article has discontinued using, is one of the parents of

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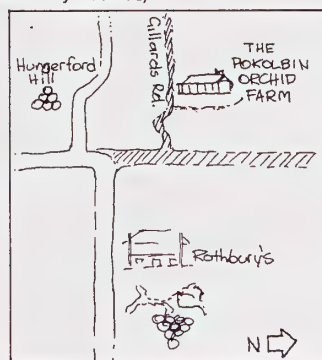
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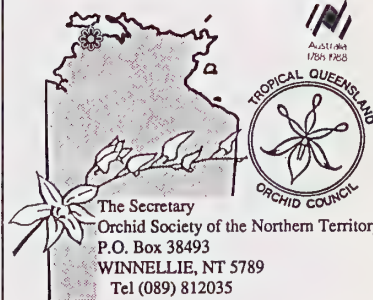
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the C. Te Puna cross which is yielding superbly shaped progeny which are vigorous growers. C. Wallara 'Gold Nugget' too with its deep, unfading yellow colour, still has a lot to offer in the generaitons to come. Therefore, some older well tried parents do still have a place in a carefully planned breeding program and despite their faults, have proven themselves over the years to yield excellent new plant material. They can continue to produce exciting new orchids when crossed onto the top new seedlings of today and tomorrow ●

### 23<sup>rd</sup> TROPICAL QUEENSLAND ORCHID COUNCIL CONFERENCE

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*Masdevallia triangularis*

A species of very easy culture from Peru and never without a few flowers; but blooms profusely in late spring.

## MASDEVALLIAS IN COOL TEMPERATE AUSTRALIA

Ray Thomson

Great was my pleasure on discovering that the genus *Masdevallia*, both species and hybrids could be grown with much success in the cool temperate regions of Australia. Such regions include southern Victoria, Tasmania and certain highland areas to the north such as Dural NSW and Toowoomba Queensland, lowland tropical areas and even Brisbane and parts of Sydney are not satisfactory because of the combined effects of Summer time high heat and humidity, both factors which can be controlled albeit at some considerable cost and effort.

We seek for the successful culture of these charming orchids; a cool atmosphere with high humidity but with visible air movement through the plants at all times, the word cool does however need qualification as many growers consider cold and cool to be synonymous, not so! In Australia the only true cold growers within the Orchidaceae would be the group of terrestrials emanating mainly from Australia's southern regions, we seek for our *Masdevallias* a temperature range ideally in the mid 20's Celcius with a fall at night to a mild 8° to 10°C,

however most of the species within the genus will grow and respond to a much wider range, excursions into the low 30s and down as low as 5° to 6°C. Both extremes causing no apparent harm when not a permanent nature. It is amazing how both temperature and humidity can be controlled with sensible movement of the plants from place to place depending on the season.

I have my greatest success benching the collection on racks close to the floor, in fact just 6 inches from a covering of crushed rock which is kept moist. For those keen to specialise and grow to perfection their *Masdevallias*, to Winter them on a mildly heated bed of moist sand is the ideal and I suggest a minimum sand temperature of 12°C, this will also be an ideal temperature for year round growth as enough warmth rises to surround the plants on the coldest of Winter days to keep the plants happy, during a normal Summer the bed can be switched off but being thermostatically controlled it may be left permanently on. The great enemy of good *Masdevallia* culture is heat and I have had plants in flask of *Masdevallia militaris* drop their

leaves when cultured in vitro at a normal 25°C in the flask growing room, on premature removal and planting into community pots grown outside in an unheated enclosure but with the mild bottom heat previously described; the leafless stubbs soon produced new leads with an air temperature mid Winter of around 4° to 5°C overnight.

*Masdevallia militaris* originates from altitudes around 10,000ft in the Colombian Andes and this experience

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*Masdevallia coccinea* var. *harryana* Arguably the most spectacular of them all, the Queen of Masdevallias from Colombia and very easy to grow.

with leaf drop demonstrates how important a knowledge of origin and environment is. Much has also been written and postulated regarding light intensity, most growers of any genus link light and heat generation together and as a combination of high light and heat generation together and as a combination of high light and heat will burn Masdevallias, Paphiopedilum, and other so called low light orchids 70 per cent shade over glass is usually applied along with a coat of glass house paint just to be on the safe side. For the genera mentioned we will then definitely have a low light situation, growth will be lush and prolific but flowering sparse. What we seek is to duplicate the natural intensity of light which can be quite high, with low levels of the heat which can be very stressing to the plants and normally causes all growth to cease, an example of high light low heat may be found at any ski resort during a fine cloudless day!

During the warmer months I grow Masdevallias with glass house paint only; on the enclosures; but 6 inches above the moist ground and with fans; as any as 5 per enclosure and with frequent damping down and fine misting i find temperatures are kept at 25° to 28°C on the hottest of mid Summer days. Given these conditions of good light and mild temperature Masdevallias have no

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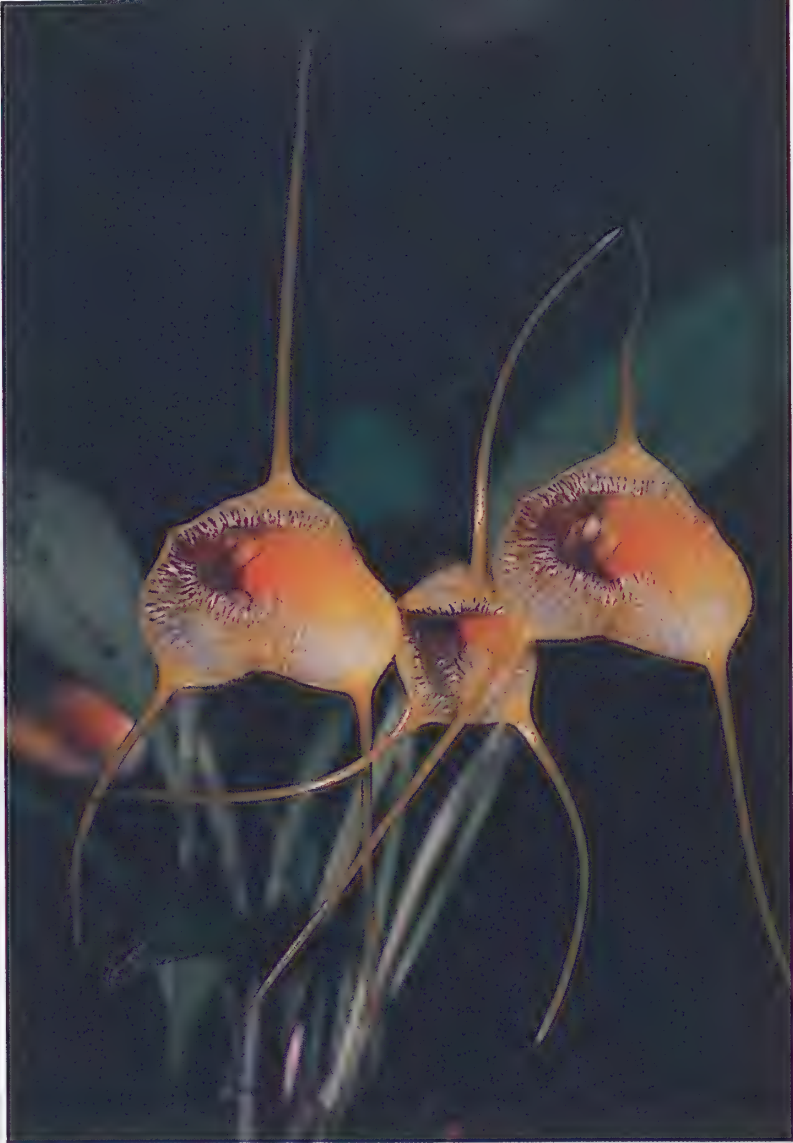
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*Masdevallia strobilii*

My favourite and a charming and vigorous species if grown under cool conditions. a native of Ecuador.

dormant period and may be fed 12 months of the year, during the Summer months they just slow down. Autumn sees an increase in activity as new leads develop and mature at a rapid rate. It is a fact that under my conditions I can and do flower many seedlings just 12 months out of flask!

Other important aspects of my culture must also be taken into consideration, growing mixture and pots are the next most important factor after environment.

Through observation of top growth, root health and growth I have settled on a mixture possibly a little unconventional for orchids but for Masdevallias; a large number of species being Lithophytic; a medium based on stone seems appropriate, because of the large surface area to volume of volcanic lava rock or scoria, this forms 50 per cent of the mix, for seedlings we use pea size stone increasing size to the next grade for mature

plants, the bark component is USA. Sequoia seedling grade for small plants and seedlings and well composted Cymbidium grade bark for larger plants, in all cases scoria is well washed and bark well sieved otherwise a dusty mud will effectively seal drainage holes in pots. The bark percentage is 40 per cent and to this we add 10 per cent rubbed or chopped sphagnum moss and I do like to have it finely graded without big lumps which would cause soggy areas inside the pots.

With the mix just described; overwatering should not be a problem, common sense should prevail, obviously plants do not need water if temperatures are low and humidity high, take care though, if a warm sand bed is being used as the bed can dry out if in operation; within 24 hours; even during a cold snap! We mist frequently rather than water thoroughly during the Winter months and with the



air movement which is an important part of the cultural requirement, drying will occur even on the coldest of Winter nights, thus; fungal and bacterial attacks are limited if not completely avoided.

I believe there are no good orchid pots being made in Australia, a few terra cotta containers approaching the old designs are available from time to time but on the whole the plastic mass produced pot is totally unsatisfactory, so you must adapt your own, air with most genera, is a very important component of culture and especially at the root zone, this is partly achieved with the mix as described but I find this not enough, Masdevallias require a constantly moist but never wet root zone so with a combination of pot and mix this can be achieved. We adapt all our pots to suit, not only adding more holes to the pot base but we increase side slots by slitting vertically up to a third of pot depth. This treatment combined with the open stoney mix gives superb aeration, the net result is manifested in beautiful white roots without the usual central rotted brown component which is an all too common feature of cymbidium culture as we in Australia know it.

While on the subject of pots let me say that if one should not tend to overpot a Cymbidium; then that goes doubly for Masdevallias, I flower the seedlings in 2" tubes and then; when through distortion of the pot I can see it's time to pot on; I go up only one size, so; from a 2" to a 2½" and 2½" to 3", for most species or hybrids 3" will be the maximum before division unless *M. veitchiana* or *M. coccinea* blood is present, if so careful increments in pot size ultimately result in a fine specimen. Research your plants thoroughly however as some species within the alliance will require basket or slab culture because of the pendulous nature of their flower spikes.

Masdevallias and their relations are not gross feeders, possibly because they are never completely dormant, their natural habitat suggests "little often" and we feed constantly but mildly, on potting up from 2" to 2½" or 3" pots a pinch of Hoof and Horn is giving excellent response, however, both seedlings and mature plants are fed weak liquid fertilizers every second or third day depending on the weather. This liquid feed is administered through a proportioner and is based on the Campbells or Aquasol system with the added chelated iron and magnesium sulphate, I should emphasise that the solution so administered is weak, this approximates the nightly damping down by either dews or rain which is a feature of the natural habitat of this genus, gentle rain or dew washing down organic matter into cracks or fissures in rocks or a mild nutrient broth trickling down the branches and trunk of a host tree.

I have experienced little trouble with pests and diseases within the genus, seedlings putting up new growth can be troubled by small slugs or snails which relish the delicate young shoots, baits or sprays can be applied without damaging the young shoots, with the constant air movement that is an absolute necessity, little trouble should be experienced from fungal or bacterial rots, however, a twice yearly application of fungicide/bactericide preparation such as Natriphene or Captain will give insurance against these killers.

Fortunately with the moist and buoyant atmosphere we are supplying our plants that other insidious killer of microscop

proportions, Red Spider; can not get a hold. I have never seen this pest on any of my Masdevallias but that is not to say they would not attack if conditions were more to their liking, regular close examination is a good routine to follow.

Yes we are indeed fortunate living in the cool temperate zones of Australia, for if our climate; like most of the country; was warm temperate or tropical; the delights and fascination of growing and flowering this truly hypnotic and captivating genus would be lost to us all ●

Ray Thomson is the proprietor of Mooroolbark Orchids in Victoria, he has successfully grown and propagated the genus Masdevallia under cool conditions for many years.

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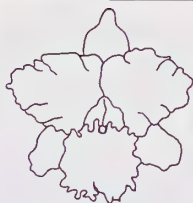
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The above crosses should be available from March onwards. Minimum of 10 plants in a 150ml unbreakable flask. \$20 each plus postage and packing, depending on the service.. West Australian customers please note that the majority of our stock is in the laboratory, and thus the nursery is not yet open to the public. I can be contacted at the address below, or at any of the Bunbury or Armadale Orchid Society meetings for flask collection.

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# Let the Sun Cool Your Greenhouse

(Ventilating with solar energy)

The energy of the sun can be used to ventilate orchid greenhouses at no recurring cost to the grower. The more sun you have, the more ventilation you can have.

Moreover, the method we're going to discuss has the sterling benefit of operating even when nothing else does. It costs nothing to operate and works even in a power outage. And it's easy to build. You're skeptical? Read on.

The principle of the chimney effect is an elegantly simple one: warm, rising air that is contained will draw replacement air into the bottom of the container... in this case a vertical pipe. That 'draw' is our means of removing unwanted hot air from the greenhouse. The chimney or stack will boost natural convection currents and if the air is heated in the chimney, the process can go on as long as the heating continues. It only works when sun is shining... but then, that's the time you need the ventilation most, isn't it?

How to heat air in a chimney? That's where the solar energy comes in. We will heat air in a chimney with the sun's rays and sustain the vertical movement of air in the chimney... and the suction at the bottom... which is going to provide extraction of the hot air... which is what we want. Neat. The whole greenhouse or solarium is, in effect, a solar chimney. We take in cool air, heat it and convect it out through the stack.

What that means to us as orchid growers is that a simple structure called a solar chimney is going to cool our greenhouses with no outside help. It turns itself on as the greenhouse heats up... and turns itself off when the greenhouse cools down. The hotter it gets in the greenhouse, the harder it works. Sound too good to be true? I know it does, but it works. And, although it has for a couple of thousand years, some of us have developed the habit of looking on anything that is cheap as being unworthy. Not so.

Now don't turn the page and say I can't build things, so this is not for me. If you really can't build things, find someone who can and have them make you one. It will be worth the small expense. The payback on the investment, incidentally, is fastest in the hot, sunny regions.

Solar chimneys can be used to ventilate greenhouses, sun porches, homes, shops,

barns, and almost any other structure they can be bolted to and where the sun shines.

## BUILDING THE SOLAR

The structure is basically a box, a foot square and 8 feet long. The four 2x2's, which are the skeleton, are attached to a base and covered on three sides with clear, corrugated fibreglass reinforced plastic. The fourth side faces away from the sun and can be covered with 3/8" exterior plywood. The base provides rigidity and a means of attaching the chimney firmly to the greenhouse structure. The guy wires are optional, but recommended in windy areas.

Hung inside the wood and fibreglass box is a 7 1/2-foot (three 30-inch sections) length of 12" stovepipe, painted flat black. (High temperature, flat black paint suitable for our purposes is available in auto supply stores. It's used for painting exhaust manifolds and barbecues, among other things. 3-M Black Velvet is good.)

This stovepipe is the source of the magic the solar chimney produces. Sun shines on the pipe, warming it and causing the air inside to begin rising. The hotter the sun, the more heat produced and the greater the chimney effect. The stovepipe is topped with a 12" attic vent turbine to improve the air extraction and to keep rain out of the chimney. The plastic 'skin' keeps the heat from being dissipated by the wind.

A small door at its base... to isolate the chimney during the cool evenings of fall and spring... will prevent unwanted loss

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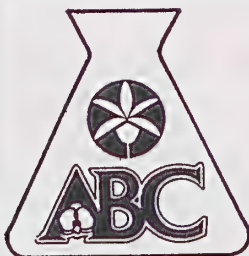
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of accumulated heat. When nighttime temperatures stay above 60°F the chimney can be left open or "on". Cabinet hinges and a magnetic catch will work just fine. I use a 3' long piece of stiff wire, attached to the door, to open and close it; long reach.

An opening in the greenhouse wall must be provided to allow a source of fresh air from the outside to replace warm air exiting through the chimney. One and one-half to two square feet of opening will do if the opening is unscreened. Double that area if insect screening is used... as it should be in most areas. Several distributed small openings are better than



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one large one. (See detail for a neat energy-saving gadget.) Do not count the area of input from an evaporative cooler in this required opening.

Locate the cool air inlets low and at the end opposite the chimney for best circulation of air inside. Effectiveness of the chimney is going to depend in large measure on the vertical distance between the cool air inlet and the top of the chimney. Greater difference means greater effectiveness. Intake low and exhaust high for best results.

### INSTALLING THE CHIMNEY

Attach the completed chimney with its bottom opening at the *highest point possible* on the end of the greenhouse. The reason is simple: we want to draw off the hottest air in the house and that means the highest.

A ceiling or turbulator fan which mixes air in the greenhouse probably will reduce the efficiency of the chimney somewhat, but we've got to have them, so don't worry about the loss. A gee-whiz feature of the system comes into operation if power goes off in hot weather. The heated air in the house stratifies with the hottest air at the highest point in the greenhouse . . . and this gives the best possible performance of the chimney.

The 'feet' of the chimney must be

strong enough to support the weight of the whole structure, so don't skimp on material dimensions here. The "feet" stand on a solid greenhouse member and should be firmly attached with either bolts or lag screws or both. Vertical height of the base is not critical and can be adjusted for best attachment to a solid greenhouse part. If none is available to mount the chimney to, make and install one.

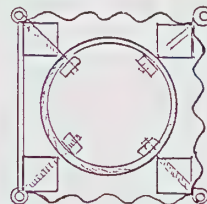
A lower external brace from bottom of the chimney to either the ground or a hip moulding on the house will relieve strain from other parts of and promote longer life.

For the macho men out there: get some help raising the chimney in place. It's awkward and dangerous, particularly if there is a breeze blowing when you put it in place. (I know, but the scars from the hernia operation have almost faded now.)

### OPERATING THE CHIMNEY

Open the hatch when you want ventilation. Close it when you don't. That's it.

Note: Do not close space between pipe and plastic. It is functional.



Stovepipe suspension detail  
(and guywire eyebolts)  
Vertical view

2"x2"x8'

Greenhouse

3/8"  
exterior  
plywood

2"x4"x16"

Hip mounting plate (2"x4")  
(Adjust angle to match  
greenhouse rafters)

### SOLAR CHIMNEY

Film plastic

1/4" hardware cloth

Chimney on;  
Cooler off;  
Cool air enters

Chimney on;  
Cooler on;  
No cool air loss

Cool air inlet check valve

### AFTERTHOUGHTS:

The chimney has three note-worthy effects: first, the running time of your cooler (if you use one) will be shortened; second, you can probably unplug your wall ventilating fan (if you use one); and third, if used in conjunction with a heat-motor vent and an emergency overhead sprinkling system . . . it could save your collection in the event of a power outage or cooler malfunction on a hot summer day. (For more information on these latter features, see *Coping With a Power Outage*, P. 11, *AOS Bulletin*, January 1982 or the book, *Culture of the Phalaenopsis Orchid*, by this author.

This system, using a 12-inch stovepipe and an 8-foot high box, probably won't provide all the ventilation needed for many greenhouses, but it will skim the hottest air from any structure in which it is used. For that purpose it is an inexpensive, cost-effective and reliable option worthy of an orchid hobbyist's consideration ●

— Bob Gordon  
Rialto, CA 92376 US



# SEQUEL TO 12TH WORLD ORCHID CONFERENCE ARTICLE A.O.R. SUMMER 1987

Karen McFarlane

How ironical the Australian Orchid Review with our article from the 12th World Orchid Conference should arrive in Cairns the same day as the proceedings of the 12th W.O.C. was delivered to us.

A quick glance through the proceedings, I couldn't believe my eyes or contain my excitement. I just had to phone Dad and tell him of my discovery.

Apart from the 'Best Vanda of the Show' and a blue ribbon for Ascda. Aribarg details of which were published on page 10 of the A.O.R. summer 1987, on page 97 of the proceedings of the W.O.C. was a photo of our delightful little species *Doritis pulcherrima* 'Yen' with a blue ribbon — 1st place. On page 121 was a blue ribbon for Den Lily 'Yang' x Den. Tomie 'lloyd', a blue ribbon for Den Halo x D. Golden Halo 'Lloyd', a blue ribbon for D. White Wine 'Lana', a

blue ribbon for D. Halo x D. Golden Halo 'Bronze'. A red Ribbon — 2nd Prize for D. Summit Gold x D. Lady Charm 'Darkie' plus on page 113 was a red ribbon — 2nd Prize for our display in its section. Venezuela won 1st and Albert and Merkel USA won 3rd place.

Even though most of the dendrobiums had not travelled well as mentioned in Dad's previous article, when we made the rounds of the show we couldn't find any better blooms than ours in the same category, we were somewhat surprised they weren't considered prize winners. Like other cut blooms they deteriorated the longer the show went on.

It appears one of the short comings of the show was not placing cards or ribbons on the winners in the displays apart from the major winners. No one had any idea if they won a prize and like us assumed they didn't with no ribbons.

At the judges forum there was a discussion on the subject. It was recommended at future shows winning blooms should be identified by different coloured tags i.e. blue/red/white so that clerks have no difficulty in finding them to place prize winners on them. "HU-RR-AH! for the recommendation. One other recommendation from the judges forum I like quote 'judges must be instructed to make allowances for slight damage on flowers flown in from overseas' unquote.

All in all the final results show our display won 7 firsts, 1 second and a second for the display. Best Vanda of the show and a silver medal. A personal gratifying result for us and Australia especially when all the Dendrobium prize winners were bred by us in Cairns.

Ursula McShane, Australia also won a first prize with her D. Madame Chintana 'Maria' ●



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# A TABLE OF ORCHID SEED- CAPSULE AGES

Alan Englert

Surely, at one time or another, every hybridizer, either amateur or professional must have had the disappointment of finding the seed-capsule of a "special" cross had split and scattered its contents far and wide over the benches, pots, paths, etc, etc.

As a result of this exasperation, I started keeping records a number of years ago of my own efforts at hybridizing — as I do my own flasking this enabled me to do both ripe and immature seed-sowing. There are a number of convictions and conclusions I have reached through examining such data: firstly, capsules which ripen on the plant during cooler months are less likely to abort and fall of than ones which develop during hot weather. I believe the weather conditions occurring during the maturation of a capsule can significantly affect its lifespan and the fertility of the seed. Fast-maturing genera are particularly prone to this, as can be seen with Australian native *Dendrobiums* — a variation of 10-15 per cent in the ripening — time of the capsule being possible from season to season with the same parent — plant.

Secondly, problems in getting crosses to "hold" in the first place can be due to many factors beyond the scope of this article — however, one tip I feel is worth passing in concerns orchids' scent. Species such as *Dendrobium falcorostrum* have a powerful perfume which they "turn on and off". I have greatly improved my chances of crosses "taking" by doing my hybridizing when the flowers are producing this scent, at which time they are presumably announcing to prospective pollinating agents that they are receptive and ready to be fertilized.

When estimating the ripening time of a female parent which is itself an inter-sectional hybrid (e.g. *Den. Peewee* = *Den. bigibbum* x *Den. tetragonum*) it seems accurate to assume a lifespan intermediate between the two — *Den. bigibbum*, for instance, can be "green-podded" at 120-150 days; *Den. tetragonum* comes off at around 70-75 days. The resulting hybrid of these two, *Den. Peewee*, was cultured green at 99 days (intermediate between the two parents of *Peewee*) with great success.

However, a point to consider is that the fertility of a cross can significantly alter the lifespan of the capsule. I believe a seed capsule will abort well short of the expected span if it does not carry a high

enough percentage of fertile seed — in other words a capsule can contain some viable seed, but the plant does not consider it worth expanding the energy to carry it through to dehiscence, unless it contains above a critical percentage of viable seed.

I tend to favour leaving the capsule on the plant as long as possible — (put an empty teabag over it to catch the seed should it split) — if it does split and you take note of its age you can repeat it next year and get it in time. Note that the pollen parent is irrelevant when computing lifespans — no matter how much the spans of the two parent plants differ, only the female parent governs the lifespan of the capsule.

The following table is the result of several years of data — gathering, in which task I have been greatly aided by many North Coast growers, who have unselfishly shared the results of their hybridizing programs. All germination results were obtained using both Vacin and Went and Thomale GD media — both media germinate very well, although Thomale is better for replating native Australian hybrids. They were sown in polycarbonate flasks, and kept under a 16 hour "day" cycle under Gro-Lux type fluorescent tubes.

In closing, I would like to hear from anyone interested in such research, and would like to encourage all hybridists to keep such records and pass them on to others, as the sharing of such information must surely benefit us all eventually ●

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# A TABLE OF ORCHID SEED — CAPSULE AGES

Part One — Australian species and hybrids

NAME	IMMATURE SEED- CAPSULES		RIPE (SPLIT) CAPSULES
	AGE-DAYS	DAYS TO GERMINATION	AGE-DAYS
<i>Bulbophyllum bracteatum</i> x self	-	-	88
<i>Bulbophyllum elisae</i> x self	-	-	95
<i>Caladenia catenata</i> x <i>catenata</i>	-	-	34
<i>Den. adae</i> x <i>adae</i>	54	31	-
<i>Den. adae</i> x <i>Gracillimum</i>	54	31	-
<i>Den. aemulum</i> x <i>beckleri</i>	62	32	-
<i>Den. aemulum</i> x <i>Gracillimum</i>	-	-	70
<i>Den. aemulum</i> x <i>kingianum</i> alba	-	-	70
<i>Den. aemulum</i> x <i>tenuissimum</i>	62	32	-
<i>Den. Aemulum</i> x <i>tetragonum</i>	78	34	-
<i>Den. Alan Printer</i> x <i>falcorostrum</i>	-	-	59
<i>Den. Alan Printer</i> x <i>fleckeri</i>	-	-	56
<i>Den. Aussie Hero</i> x <i>Bardo Rose</i>	55	16	-
<i>Den. Aussie Hero</i> x <i>falcorostrum</i>	54	6	-
<i>Den. Bardo Rose</i> x <i>kingianum</i>	-	-	48
<i>Den. beckeri</i> x <i>beckleri</i>	62	32	-
<i>Den. beckeri</i> x <i>falcorostrum</i>	56	11	-
<i>Den. beckeri</i> x <i>lichenastrum</i>	57	11	-
<i>Den. beckeri</i> x <i>tenuissimum</i>	62	32	-
<i>Den. beckeri</i> x <i>teretifolium</i>	62	32	-
<i>Den. bigibbum</i> x self	120-150	-	-
<i>Den. (Debbie McFarlane</i> x <i>tetragonum</i> ) x <i>kingianum</i>	-	-	291
<i>Den. Delicatum</i> x <i>Alan Printer</i>	95	Nil	-
<i>Den. Delicatum</i> x <i>Bardo Rose</i>	-	-	52
<i>Den. Delicatum</i> x <i>falcorostrum</i>	-	-	63
<i>Den. Delicatum</i> x <i>kingianum</i>	-	-	63
<i>Den. Delicatum</i> x <i>kingianum</i> alba	-	-	56
<i>Den. Delicatum</i> x <i>speciosum</i> v. <i>hillii</i>	-	-	63
<i>Den. Ella Victoria Leaney</i> x <i>Alan Printer</i>	-	-	61
<i>Den. Ella Victoria Leaney</i> x <i>kingianum</i>	-	-	63
<i>Den. Ella Victoria Leaney</i> x <i>tetragonum</i>	-	-	63
<i>Den. Ellen</i> x <i>Hastings</i>	-	-	80
<i>Den. Ellen</i> x <i>tetragonum</i> (Nth. Coast form)	89	30	-
<i>Den. Ellen</i> x <i>tetragonum</i> giganteum	-	-	69
<i>Den. falcorostrum</i> x <i>Andrew Persson</i>	-	-	52
<i>Den. falcorostrum</i> x <i>Aussie Hero</i>	-	-	52
<i>Den. falcorostrum</i> x <i>Bardo Rose</i>	-	-	52
<i>Den. falcorostrum</i> x <i>beckleri</i>	-	-	40
<i>Den. falcorostrum</i> x <i>falcorostrum</i>	47	12	-
<i>Den. falcorostrum</i> x <i>falcorostrum</i>	-	-	64
<i>Den. falcorostrum</i> x <i>kingianum</i>	-	-	49
<i>Den. gracilicaule</i> x <i>adae</i>	50	22	-
<i>Den. gracilicaule</i> x <i>beckleri</i>	52	37	-
<i>Den. gracilicaule</i> x <i>falcorostrum</i>	50	11	-
<i>Den. gracilicaule</i> x <i>Gracillimum</i>	64	12	-
<i>Den. gracilicaule</i> x <i>kingianum</i>	-	-	52
<i>Den. gracilicaule</i> x <i>kingianum</i>	-	-	76
<i>Den. gracilicaule</i> x <i>lichenastrum</i>	52	37	-
<i>Den. gracilicaule</i> x <i>monophyllum</i>	54	19	-
<i>Den. gracilicaule</i> x <i>rigidum</i>	68	21	-
<i>Den. gracilicaule</i> v <i>howeanum</i> x self	67	22	-
<i>Den. gracilicaule</i> v <i>howeanum</i> x self	-	-	71
<i>Den. gracilicaule</i> v <i>howeanum</i> x <i>speciosum</i>	-	-	66
<i>Den. Gracillimum</i> x <i>falcorostrum</i>	54	22	-
<i>Den. Gracillimum</i> x <i>falcorostrum</i>	67	8	-
<i>Den. Gracillimum</i> x <i>Gracillimum</i>	54	33	-
<i>Den. Gracillimum</i> x <i>Gracillimum</i>	-	-	69
<i>Den. Gracillimum</i> x <i>kingianum</i>	-	-	59
<i>Den. Gracillimum</i> x <i>tetragonum</i>	-	-	58
<i>Den. Hastings</i> x <i>adae</i>	65	13	-
<i>Den. kingianum</i> x <i>Bardo Rose</i>	54	14	-
<i>Den. kingianum</i> x <i>kingianum</i>	64	6	-
<i>Den. kingianum</i> x <i>kingianum</i>	-	-	73
<i>Den. kingianum</i> x self	-	-	66
<i>Den. kingianum</i> x <i>speciosum</i>	-	-	67
<i>Den. kingianum</i> x <i>speciosum</i> curvicaule	63	8	-

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# A TABLE OF ORCHID SEED — CAPSULE AGES

Part One — Australian species and hybrids

NAME	IMMATURE SEED- CAPSULES		RIPE (SPLIT) CAPSULES
	AGE-DAYS	DAYS TO GERMINATION	AGE-DAYS
<i>Den. kingianum</i> x <i>tetragonum</i> (Nth Coast form) ...	-	-	64
<i>Den. kingianum</i> x <i>tetragonum</i> giganteum .....	-	-	67
<i>Den. kingianum</i> x Zip .....	63	8	-
<i>Den. kingianum</i> alba x <i>speciosum</i> .....	-	-	68
<i>Den. Kith Murdoch</i> x <i>tetragonum</i> giganteum .....	67	18	-
<i>Den. lichenastrum</i> x self .....	-	-	64
<i>Den. linguiforme</i> x <i>teretifolium</i> v. <i>fasciculatum</i> .....	55	19	-
<i>Den. Lynette Banks</i> x <i>tetragonum</i> giganteum .....	-	-	78
<i>Den. monophyllum</i> x <i>monophyllum</i> .....	76	13	-
<i>Den. Peewee</i> x <i>Hilda Poxon</i> .....	99	20	-
<i>Den. ruppianum</i> x self .....	52	16	-
<i>Den. speciosum</i> v. <i>hillii</i> x <i>falcorostrum</i> .....	-	-	46
<i>Den. speciosum</i> v. <i>speciosum</i> x <i>tetragonum</i> .....	-	-	62
<i>Den. (Star Imp</i> x <i>kingianum</i> ) x Zip .....	62	20	-
<i>Den. striolatum</i> x <i>pungioniforme</i> .....	-	-	65
<i>Den. striolatum</i> x <i>terifolium</i> .....	50	14	-
<i>Den. suffusum</i> x <i>fleckeri</i> .....	-	-	60
<i>Den. suffusum</i> x "Green Mist" x <i>falcorostrum</i> ....	54	32	-
<i>Den. suffusum</i> x "Green Mist" x <i>graciale</i> .....	54	32	-
<i>Den. suffusum</i> x "Green Mist" x <i>kingianum</i> .....	52	42	-
<i>Den. suffusum</i> x "Green Mist" x self .....	52	45	-
<i>Den. Sunglow</i> x <i>tetragonum</i> giganteum .....	-	-	130
<i>Den. tenuissimum</i> x <i>falcorostrum</i> .....	56	11	-
<i>Den. teretifolium</i> fasc. x <i>linguiforme</i> .....	-	-	78
<i>Den. teretifolium</i> fasc. x <i>striolatum</i> .....	-	-	75
<i>Den. tetragonum</i> (Nth. Coast form) x <i>speciosum</i> ...	64	23	-
<i>Den. tetragonum</i> (Nth. Coast form) x same. ....	82	17	-
<i>Den. tetragonum</i> (Nth. Coast form) x same. ....	73	10	-
<i>Den. tetragonum</i> (Nth. Coast form) x same. ....	74	16	-
<i>Den. Yondi</i> x <i>speciosum</i> <i>pendunculatum</i> .....	-	-	71
<i>Peristeranthus hillii</i> x self .....	365 aprx	20	-
<i>Phaius</i> species and hybrids .....	120-150	-	-
<i>Phaius tancarvilleae</i> x self .....	-	-	254
<i>Pterostylis curta</i> x self .....	-	-	59
<i>Pterostylis longifolia</i> x self .....	-	-	40
<i>Sarcophilus ceciliae</i> x <i>ceciliae</i> .....	187	33	-
<i>Sarcophilus ceciliae</i> alba x self .....	164	40	-
<i>Sarcophilus hartmannii</i> x self .....	-	-	204
<i>Sarcophilus hartmannii</i> x <i>Rhinerrhiza diviflora</i> ...	156	52	-
<i>Sarcophilus Lois</i> x <i>hartmannii</i> .....	224	46	-
<i>Sarcophilus Pinkhart</i> x <i>ceciliae</i> .....	180	30	-

REFERENCES (and thanks), D. & E. Amey, K. Barlow, L. & C. Friar, P. Hicks, S. Penman and E. & I. Short.

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50m Len., WOVEN x 1.83m

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N1586 32% 109.84	N1588 50% 103.67
N1589 50% 109.84	N1591 70% 114.06
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N1594 80% 169.37	N1596 92% 219.38

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N15998 70% 235.00	N15997 70% 220.45
	N167041 80% 276.13

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GREEN	BLACK
N15995 (50) 156.49	N1611 (50) 154.17
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N16167 (80) 213.52	N16165 (80) 206.12

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- Blc. Blumen Insel 'Corona' x Lc. Colorama 'The Clown'
- Sl. Orpetii 'Shonan' x Slc. Tangerine Jewel 'Vi'
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- Phal. Funtime x P. Orlades White Rock
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| Guadalajara 'Siesta'     | Burgundian 'Bexley'     |
| Beacon Fire 'Cecil Park' | Pendragon 'Broadmoor'   |
| Mainstream 'Hurrah'      | Sarah Jean 'Wondabah'   |
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- |                                       |                                  |
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- Phal. Joseph Hampton 'Dianne' x P. (Joseph Hampton x Muriel Turner)
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About 1885-1889 some hybrid orchid flowers were displayed in England which caused a sensation and from then on there was a rush to see what crosses could be made. At this time the House of Sander in England had been long interested in all phases of Orchidology and was a leader in sending collectors to the four corners of the tropical world looking for new species. So it was to be expected that when they published the

orchid guide in 1901 some attention would be given to orchid hybrids and 32 pages were used to list in alphabetical order the known named varieties of hybrids. There were also additional tables showing the pollen and seed parents.

It is interesting to note that while only four Cymbidium parents were listed, over 1,000 Cypripediums (Paphiopedilums) appeared in the list. However, a casual glance disclosed endless duplication due to the fact that at that time hybrids were given names regardless of whether the cross had been previously made and named. Of course, this was to be expected as there was no place where hybrids could be registered as is the case today. There was even one duplication among the six Cymbidium hybrids. To bring order out of such a chaotic state was the life's work of Mr Fred K. Sander and he earned the profound and immeasurable gratitude of orchid growers

the world over by his contribution of many thousands hours work devoted to straightening out the nomenclature and organizing the record of parentage. Since the first 1946 edition of Sanders List of Orchid Hybrids, orchid growers have enjoyed the fruits of Mr Sander's labour. Today this work is carried on by the Registrar of Orchid Hybrids at the Royal Horticultural Society in England. Today to have the complete list of orchid hybrids you need 6 volumes. The last volume 1981-1985 has just been released and can be purchased from the Royal Horticultural Society in England or through distributors in Australia.

If you have a copy of Sanders you can trace the parentage of an orchid such as Cymbidium Sensation, registered as the name for the cross between Cym. Spartan Queen and Cym. Fascination by Wondabah in 1961. Under Sensation you can see the registered names of orchids crossed with Sensation, e.g.

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CLASS 221 DEN. LILY YANG X D. TOMIE 'LLOYD'	BLUE RIBBON
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Cym. Valley Goddess 'Rajah' (4N) (Sleeping Castle x Desiree 'A'Logann').

Sensation x Bethlehem = Memoria Ken Blackman, Sensation x Khyber Pass = Panama Red. If you want to trace the parentage of Sensation back further you can look up its parents i.e. Spartan Queen, see figure 1. The parentage of Spartan Queen is Regina x Sparta registered by S in 1946. Who is S you may ask? If you turn to the front of Sanders List of Orchid Hybrids there is a list of abbreviations, and if you look down you will find S which was formerly Sanders of St. Albans Limited, Royal Orchid Nurseries, St. Albans, Hertfordshire, Great Britain, later D.F. Sander of Lavender Cottage.

You do not have to buy the complete list of orchid hybrids to be able to trace parentage. For many years Frank Slattery of Sydney has put out a small book called Cymbidium Names and Parentage which costs under \$10. It doesn't have the cross references of Sanders List of Orchid Hybrids, however, it is possible to trace a Cymbidium's parentage using the book. Also all new registrations are published in the English orchid Review and American Orchid Bulletin. Most of the larger orchid clubs within Australia receive copies of the Orchid Review and the American Orchid Society Bulletin and the major

state bodies have one or more sets of the complete Sanders List of Orchid Hybrids for members to peruse.

If you decide that you want to register a name for a new orchid hybrid, you will have to obtain a registration form from the Registrar of Orchid Hybrids, The Royal Horticultural Society, Vincent Square, London, SW1P 2PE, England. There is no charge for the form, however, if your application is successful, the fee is US\$15 (approx. Australian \$25). You must give a first and second choice for the new name (proposed grex epithet), you must show the genus e.g. Cymbidium and the parentage. Once the cross is registered it doesn't matter whether the cross was made Sensation X Valley Sprite or whether the cross was the reverse Valley Sprite x Sensation. It doesn't matter which varieties of Sensation or Valley Sprite are used, all progeny using the two parents Valley Sprite and Sensation are called Cauldron.

You must fill out the applicant's declaration as to originator. The originator is the owner of the parent plant, that is the plant that carried the seed pod at the time of pollination. If the originator is unknown to you, you must explain why, and if, e.g. you cannot remember where you purchased the seedling and the seedling has been around for years with no-one bothering to register the plant and

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A new orchid hybrid, Cym. Valley Hearth 'Embers' (4N) (Sensation X Kiata). Embers is the varietal name and is never registered.

you have made subsequent crosses with the plant, an application for registration will probably be successful. If you are not the originator, but you know who was, you can seek their permission and these days with the costs around \$25 per registration the originator will almost certainly give you permission to register the plant. To complete the form you need to know the date that the cross was made, the date of first flowering and a description of the first flowers or a colour photograph.

Because of the high incidence of rejected applications, due to prior registration or prior use of proposed name or a similar sounding or looking name, only colour slides will be returned in the case of a rejected application. Large pictures, etc. will not be returned due to cost. Also applications must be made in English. If your application is successful you will receive an account from the Registrar of Orchid Hybrids for the amount outstanding which must be paid forthwith, otherwise you will be unable to register orchids in the future. In due course your new name will appear in magazines, orchid catalogues and eventually in the latest volume of Sanders List of Orchid Hybrids.

In order to prevent rejected applications it is important to search all volumes of Sanders List of Orchid Hybrids and recent registration lists in magazines, for the

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# ORCHID EXPO '88

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Can you imagine an Orchid Show only 5 minutes walking distance from the ocean; in a relaxed holiday atmosphere; at a beautiful Cultural Centre; with a World-class Lecture Theatre?

This will be Orchid Expo '88 to be held from the 8th to 12th September 1988, at the City of Caloundra on the Sunshine Coast just 45 minutes by road north of Brisbane — a Show and Conference which will be a most enjoyable celebration of orchid growing, and a tribute by the Sub-Tropical Orchid Council, Queensland, to Australia's Bicentennial celebrations. Timed also to coincide with World Expo 88 (our Show and Conference has been endorsed as an official function) registrants and visitors can take the opportunity to visit this event in Brisbane at the same time.

The Sunshine Coast can boast of some of Australia's premier tourist attractions and areas of natural beauty and Conference tours are available to the most interesting of these attractions.

The opening night on Thursday, September 8, 1988 (for those who register early) will be held at the Civic Cultural Centre. From 6.30pm registrants will be able to preview the Show and enjoy a "first look" at all the winners. Quality at the Show will be high, and the very wide range of genera grown in the "Sub-Tropical" area, will ensure a variety of orchids second to none.

The large and beautiful foyer of the Civic Centre will feature some unique displays, including a wall map of Australia, displaying the badges of all Australian Societies, together with a card outlining their meeting dates, times and venues. Incidentally, if your Society has not yet forwarded their badge to us, please do so to enable recognition to be given to your Society.

Overseas visitors are always intrigued with the Epidendrum (reed-type) orchids grown in Southern Queensland, and the Foyer will feature them 'en masse'.

Lecture sessions begin on Friday September 9, and are open to registrants only. The line-up of speakers both from overseas and Australia is an impressive one. Mr Syd Wray from New Zealand will be talking on the Oncidium Alliance — a subject which holds much interest for orchid growers. Two American speakers who derive their fame from their work with Phalaenopsis — Mr John Miller and Mr George Vasquez — are

very knowledgeable in the areas of hybridising and cultivation. A subject which is sure to be popular is the section on miniature orchids, to be covered by Mr Jack Wolton of Hawaii. Australian speakers include Mr Don Gallagher, Mr Len Lawler, Dr Noel Grundon and Mrs Marj Purnell who will cover the topics of Cymbidiums, Australian natives, orchid fungi and Ceratobium Dendrobiums respectively. The Lecture Theatre is situated within the Show complex so there will be no travelling involved between venues.

Saturday night is the Gala Tropical Banquet at the Sunshine Plantation ('Big Pineapple') — one of Australia's premier tourist attractions. This will be an event in keeping with the Conference — relaxed, happy in a superb venue with tropical food such as you have never experienced. International Speaker, Mr Bob Gordon, will be the dinner speaker. Bob is an author of many Phalaenopsis books, and, at the Conference, will be launching his very latest publication. Bob is noted for his with and "laid back" style and this will be an enjoyable and informative interlude. Have you ever been on a train ride through a moonlit rainforest, at night? This is part of your night out at the Sunshine Plantation.

A change of atmosphere is planned for Sunday with a day in the open at a park on the top of the Blackall Range. "On a clear day you can see forever" from Mary Cairncross Park to the spectacular Glasshouse Mountains and the Coast. Transport to and from Caloundra will be provided. An Australian Bar-B-Que and a rainforest walk will be just the thing to

"blow away the cobwebs" from the night before.

Monday night, September 12, is the night for farewells, with — well we aren't going to tell you. It's a Mystery Night at a mystery venue, with a mystery dinner and mystery entertainment. Intrigued?? The only way to find out will be to join in the fun — value is guaranteed!

There is much international interest in the Conference, and group exhibits from overseas will add to this spectacular show. Australian societies have been most supportive with their participation. Think about joining us for this exciting experience.

For full details on the Conference, tours, functions and accommodation drop a line to Mrs D. Mitchell, MS 956, Flaxton, QLD. 4560 or phone (071) 45 7334 ●

D. M. Mitchell,  
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Orchid Expo 88

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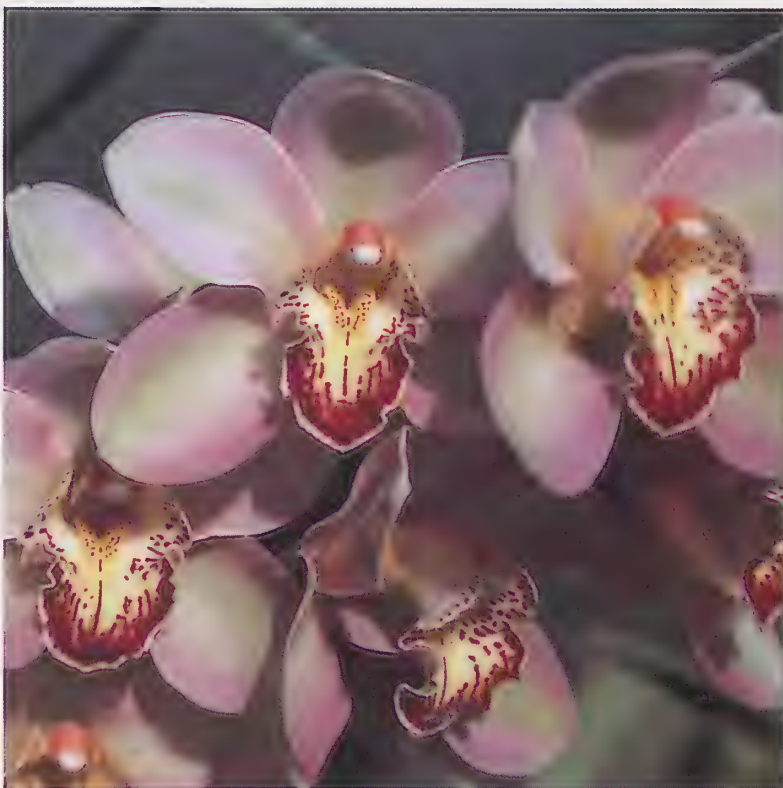
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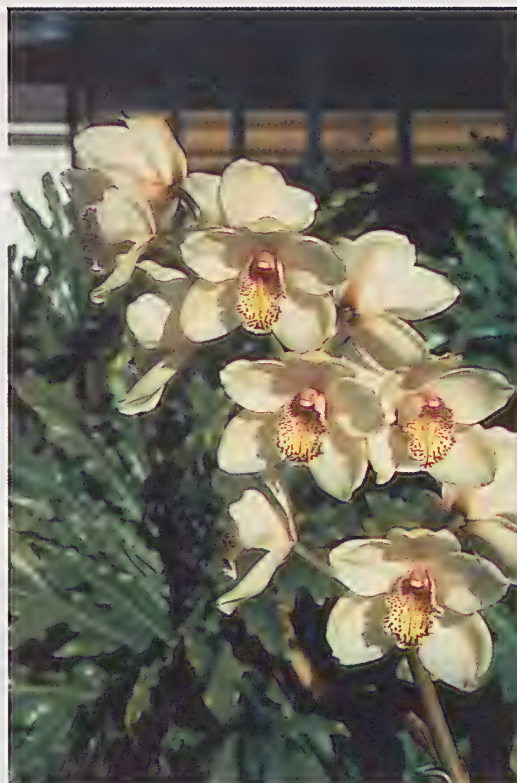
C. Winter Fair 'Honey' x C. Wallara.

These Cymbidiums were bred to give high productivity but to ensure reliable cropping and a more precise understanding of their cultural requirements was necessary.





Cymbidium Sleeping Dream x C. Yamba.



C. Winter Wonder 'Josephine'.

## Cymbidium Flowering Logic

Alvin Bryant

There is a logic to the flowering of cymbidiums if we take the facts we have in our possession and put them together. This logic points to the type of changes we should make in our present cultural practices both for improved production and the possible elimination of that bad flowering year. The ability to know in advance the size of the next season's crop is a goal well worthy of serious thought by all of us.

As each season approaches the usual conversation will hinge around speculation as to whether it is a good flowering year or not and we see growers varying heavily from one year to the next with their crop yields. In fact there is an acceptance that some years will be good flowering years and others not so good and it here the danger lies for it can stop us from looking further. The clue to look further is reinforced when it can be observed that other growers maintain consistent yields. Perhaps it is a special location but then again it might be something else. Whether it be season or location which can account for variations in production the question should be asked as to whether our cultural methods

can be improved so that the crop and its quality is stable in spite of the influences of season or reasonable location.

Let us look at what we have been told. Most will be familiar with basic flowering requirements such as (1) the plant should have sufficient light to bring about a change from a vegetative growth cycle to a flowering cycle and the reason is variously given as either breaking down a particular hormone or shifting its concen-

tration from leaves to roots (2) the phosphate level should be above a certain minimum (3) there should be a drop in temperature and this is given as a need for it to fall below 12°C or, according to others, a relative drop but no word as to how often (4) the nitrogen level is recommended as being 2.25 per cent of the dry weight of the leaf but a number of large and experienced growers feel this should be just under 2 per cent.



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To this we can add some observations. (1) Young seedlings grow most rapidly in the January to May interval (2) flower spikes are visible in January (3) plants divided in September usually do not flower as well as if they had been left unbroken (4) it is a common practice to start watering and fertilising as the weather warms in September (5) the growing rhythm of a plant should be such that the new growths are on the verge of bulbing in January and this growth should flower (6) plants which are given insufficient water do not make up their new growths in time and lose their productivity (7) plants drop leaves from their older bulbs in March (8) watering before bulbs and foliage have dried from previous watering can cause plants to rot (9) the leaves on well cultured plants stand up and this is an important instant appraisal guide (10) plants grown too close together do not flower well and may not dry between waterings so plants should be a pot space away from each other (11) light levels should be good with a slight yellow tinge to the green of the leaf being a good guide (12) plants grown in a glass house all year do not flower as well but this can be corrected by controlling the glasshouse environment, or seasonally changing the roof cover or moving the plants out.

In 1983 the nursery was changed over to trickle irrigation. For a number of seasons prior to this satisfactory results had been obtained by using Nitraphoska with an N.P.K. ratio of 13:6:17. The measure of satisfaction was the result of examining the new growths each January and if those about to bulb showed flower initiation then all would be deemed to be well.

With the advent of trickle irrigation the need to have fully soluble fertilisers required a change in fertiliser and as a leaf analysis was to be instituted the nitrogen levels were lifted in anticipation. Subsequent leaf analysis results in April 1984 showed the nutrient levels were in the "good" range with nitrogen at 2.25 per cent and potassium just on 2 per cent. The 1984 cut flower crop however dropped by some 10,000 blooms. Subsequent leaf analysis results showed the levels remained good but the 1985 crop dropped by a further 10,000 blooms. Now this was not unexpected for others who had gone to guided leaf analysis methods had experienced similar results. The plants however, never looked better for the watering was now much more efficient and the nitrogen level was higher. As other conditions were unchanged, nitrogen level was the prime suspect.

Throughout 1984 I kept looking through the information mentioned above but it was not fitting together. It was not until early 1985 I decided to see what was happening in the species environment and the flowering logic ensued.

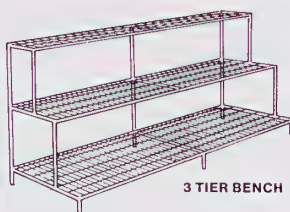
My reading tells me that a number of the cymbidium species grow in the foothills of the Himalayas at an altitude of about 1000 metres. They are to be found at the edges of the forest areas and are watered by the monsoons. If we dwell on this we can envisage the warm air under the foliage cooling and falling so that we could expect to find cooler air flowing out the side of the forest and over the cymbidiums. At the edge of the forest good air movement could also be expected which would dry the plants off between waterings. Also, because of the altitude there would be a reasonable difference in day and night temperature. The monsoons are summer rains with dry conditions for the rest of the year. This suggests that the plant may be gradually moving into a stress situation in the spring when flowering initiates and once this has happened the cycle repeats with the copious watering, high temperatures and longer summer days.

This yielded the first difference. The cymbidium in its natural state was growing to a cyclic pattern and my fertiliser programs had ignored this and

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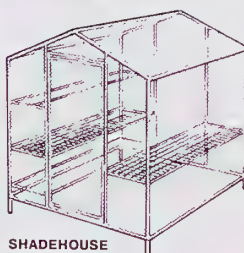


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just aimed at maintaining optimum levels throughout the year.

If we look at the cycle for the year (southern hemisphere months used from now on) by taking the beginning of January (southern hemisphere second summer month) as a starting point we have a position where the plant is growing actively and the flower spikes can be detected as a swelling at the base of the new bulbing growths. This continues through the summer, followed by flowering ranging through autumn, winter and into the spring with growth slowing in the winter and increasing again as the weather warms. It is reasonable to take October to December as initiation time for if a block of cymbidiums are broken and propagated in September the flowering is not as good the following season so initiation must occur sometime after September. As the flower spikes are present by the end of December then initiation must occur sometime in these months.

The significance of this cycle did not strike me for some time for I did not immediately consider it against the cycle for plants in general. For plants in general the cycle was growth, initiation and flowering but with cymbidiums initiation, was in the early part of the growth cycle and if it was thought of as an initiation, growth and flowering cycle

then we had extracted the second difference.

If we look at plants in general there are well documented reasons for giving higher nitrogen levels in the growth cycle and less in the initiation and flowering phase. The same applies to the practice of increasing the nitrogen to potassium ratio in the hot summer months. This is also the time of plenty for our cymbidiums so higher nitrogen levels are harmonious with conventional thinking for this time. In the spring however we have a position where the weather is warming and the accelerated growth cycle is starting. For this, higher nitrogen

levels would be indicated and yet for cymbidiums this and the early summer is the time of flower initiation when lower nitrogen levels are indicated. This apparent contradiction suggested that the plant must have a mechanism for resolving this which points directly to the role of the pseudobulb. In order to begin the growth cycle before the monsoons start a storage device would be needed to hold nutrients from the time of plenty for release in the spring. If this is the role of the pseudobulb then it is also reasonable to expect that a correct nutritional balance would be translocated for both new growth and flower initiation. As a

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result there is no need to rush into increased nitrogen levels until it is known initiation has occurred (end of December). Only then should it be given to cater for the heavy growth and storage uptake phase. This reasoning preserves the lower nitrogen for initiation maxim and goes against the present practice of applying high nitrogen levels in the spring to push the new growth which clearly contradicts initiation requirements. This gave the third difference.

This logic now offers an explanation as to why a number of growers can have good cropping for several seasons and then have a poor year while others do not seem to be affected. The puzzle was that the season appeared to have some bearing upon it and yet all growers were not affected. However it all fits together if we think of higher nitrogen levels being applied in the spring and the nitrogen level rising to a point where initiation is inhibited. If initiation occurs before this point then all is well but if a seasonal variation delays initiation then a reduced flowering occurs.

From this a simple profile was indicated. From January to May 1985 (I now feel this should have been only until leaf drop time in March/April) the plants were given a nitrogen to potassium ratio of 2.25 to 2 to bring the plants into their optimum levels in their time of plenty, the summer. For the rest of the year when

flowering and initiation occur, nitrogen was reduced so that the average over 12 months was one where nitrogen should be slightly less than two per cent and potassium two per cent on leaf analysis. This was repeated in 1986 and again in 1987. The 1986 crop was almost double any previous best and the 1987 crop just as good.

This yearly average of the potassium to nitrogen ratio was chosen as the result of discussions with international growers who seemed to agree that a nitrogen slightly less than potassium figure was best. There was another alternative and that was to constantly fertilise to give a leaf analysis of just under two per cent for nitrogen and two per cent for potassium all the year around but a faith in the plant's mechanism for storage in its time of plenty for use in leaner times seemed to have an advantage. The question of just how much higher the nitrogen level to potassium in the summer should be and how much less the nitrogen level to potassium can be in the flowering and initiation times is one which will have to be answered in the future.

It should also be noted that the watering and fertilising rate was always based on keeping the roots moist but seeing that bulbs and foliage dried before the next watering. Allowance was made for the watering and fertilising rates to increase in the spring as the weather warmed but



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the nitrogen to potassium ratio was not altered.

A point which has gradually become more significant to me is the further consideration of the rate of leaf loss on the older bulbs in March/April. This may be our most important clue as to how much nitrogen should be given in the summer in relation to a balanced lesser rate for the rest of the year. It may also be the signal to drop nitrogen levels as the plant is making decisions in accordance with its existing uptake. (For these tests I carried the higher nitrogen level into May still being hesitant to fully follow the logic messages but now the higher nitrogen level is ending with leaf drop time in March/April).

I assume the large growers know how to calculate their fertiliser ratios. Mine were adapted from the Matkin recommendations. I was interested to note that the chemicals recommended were "old hat" stemming back to those used in the 1890s. Throughout the year potassium nitrate with diammonium phosphate was alternated every three or four weeks with potassium nitrate and magnesium sulphate. From the beginning of January through to May (corrected now to leaf drop in March/April) ammonium nitrate was added to increase the nitrogen level. Calcium and other nutrients were supplied as a result of top dressing with poultry manure at the beginning of January. The location deficiencies of boron and molybdenum were added unchanged according to Matkin recommendations.

During the course of these tests I refrained from leaf analysis in order that I would not be deterred by some adverse readings for my workout was one of logic and hypothetical calculation. Only now will I be returning to leaf analysis to better interpret what has resulted. I expect to look at leaf analysis results differently in future for it will take into account the probable effects of seasonal storage and translocation of nutrients on the readings.

There are two points which arise from this exercise in logic namely (1) regard it as a beginning from which an eventual fine tuning of cultural requirements will emerge. At present I am not attempting to present a precise end result. (2) use it as a base to test the cultural requirements of other genera. For instance we can look at Phalaenopsis and observe that these do not have pseudobulbs which suggests that their cycle might be growth, initiation and flowering. We can look at Paphs and make the same observation. When we look at Dendrobiums however we can observe that they have pseudobulbs and ask the question as to whether their cycle might be initiation growth then flowering. If the different genera are examined from this point of view then a more precise

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pointer to their cultural requirements might also emerge.

The following is included for the small grower (Sydney area) who has to buy the fertiliser from the shelf.

For those who use Aquasol my observations show that if used all the year around a less than optimum crop is obtained as it is a formula for growing with a nitrogen level higher than potassium level. As a result I would suggest using it from January to leafdrop in March/April and then changing to, say, Phostrogen for the rest of the year. This would give a lower nitrogen level on a yearly averaging than my tests but only time will tell if the amount of nitrogen the cymbidium stores in the time of plenty is adequate to cover this.

For those who use the Campbell blue and yellow formulations I disagree with part of the instructions and feel they may have been the result of using the growth, initiation, flowering cycle instead of the cymbidium's initiation, growth and flowering cycle. As a result I would suggest the blue (higher nitrogen) formula from January to leaf drop in March/April and the yellow (lower nitrogen) for the rest of the year although it is possible the blue formula while good for smaller plants may be too high for plants at flowering size.

I notice that Retec Ltd offer Liquifert

and Florafert. I have a high opinion of this large company and suggest a close look at these products.

It should be kept in mind that there are difficulties in formulating one complete fully soluble chemical fertiliser as certain chemicals are antagonistic to others. For instance, of too much magnesium is present in some forms with phosphorous the phosphorous will precipitate out. It is for this reason that growers will have seen odd articles over the past 20 years advocating the use of a separately applied magnesium supplement to Aquasol. Also there can be problems with calcium presence and some formulae may not have it in at all. For this reason I advise the addition of an organic fraction such as poultry manure at the beginning of January, as a topping (if possible do not let it come in contact with the plant) ●

### A.O.R. WELCOMES EDITORIAL CONTRIBUTIONS

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# Australian Orchid

Reported by Ronald Kerr

Dr Boden, Director of the National Botanic Gardens, Canberra, has written to the Foundation expressing pleasure at the effectiveness of the complete computer system donated by the Foundation and "Nell and Hermon Slade Trust".

For years the Gardens have had to depend on the Government central typing pool. The remoteness of the pool and the lack of familiarity with botanical terms by pool typists inevitably caused errors. Also there was always a backlog of data.

The internal computer system has overcome these problems, resulting in more rapid processing of data in such fields as indexing collections and records, research projects, and educational programs. This means better service for the public.

The system has also made co-operation with other botanical institutions, particularly Kew, easier through the simple exchange of computer data disks.

All this improved efficiency for an outlay of just under \$18,000.

### Solomon Islands

Robert Mitchell from Kew has completed a study of the orchids of the Solomon Islands. His journey was substantially financed by the AOF. A program of shots taken during his travels has been composed for the AOC Slide Program Library. Some new orchids were discovered and the geographical range of others extended.

A copy of Robert's report is available from the AOC in return for a donation of \$5.00. It is a worthwhile addition to any botanical or society library.

### Orchids and Butterflies

What's the connection? You'll find it in

the Butterfly House at the Melbourne Zoo. Members of the Foundation have been donating orchid plants for this large and unique structure. Temperature is kept at a constant 25°C. If you care to contribute plants they will be welcome and help to make excellent publicity for orchids.

### Species Bank

You can contribute to the practical conservation of orchids by selling your species and sending the seed to the AOF Species Bank. Loose seed should be wrapped and sent to Mr David Husted, 81 Darvall Road, West Ryde, NSW 2114.

### AOF Awards of Honour

These awards recognise outstanding work for orchids by individuals. Nominations can be made to the AOF by any person and should be accompanied by support from at least two others, along with a resume of achievements. Three nominations have been made.

Mr Bill Murdoch has been nominated by Mr George Hillman, and supported by Mr Leonard Field and Mr Richard Hall.

At over 90 years of age Mr Bill Murdock is a legend to native orchid growers. Bill set the wheels in motion for the formation of the Australasian Native Orchid Society. He was founding President and served for three years, then a further three years as Vice-President. He has been a long time member of the AOF.

Mr Murdock has visited and helped ANOS groups and other societies in most States, and at his own expense. Many ANOS groups and some societies

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# Foundation News

have made him an honorary member. He doesn't travel these days but it just as much interested in native orchids as ever.

Mr Hermon Slade has been nominated by Mr Ronald Kerr, supported by Mr Gerald McCraith and Dr William R. Rigg.

Mr Slade was a founding member of the Orchid Society of NSW. Also founding editor of the *Australian Orchid Review*. His interest in species orchids resulted in many fine articles in AOR which greatly increased general interest in growing them.

His interest in Papua New Guinea orchids is immense and has been very influential. He founded the New Guinea Biological Foundation for the purpose of introducing new food crops into that country and improving village culture. A secondary objective was to aid the conservation of New Guinea orchids.

He was a co-founder of the AOF and has supported it strongly financially.

Mr Slade now lives in Vanuatu and was for some years in New Guinea. He has been a patron of botanists visiting Australia, New Guinea and Vanuatu, assisting them in many practical ways. Recently he donated half a million dollars towards the building of a glasshouse complex in Sydney Botanical Gardens which will be one of the finest glasshouse complexes in the world.

The third nominee is Mr Gerald McCraith, founding and still Director of the Australian Orchid Foundation. Nominator is Mr T. William Paddock, supported by Mr Frank Slattery and Dr Arthur Parkin.

Mr McCraith joined the Victorian Orchid Club in 1931. After returning from the war he joined the VOC com-

mittee and has been active ever since. He was VOC President 1959-1962.

In 1960 he strongly supported the late Sir John Hall Best in forming the AOC, and was its President for five years 1964-69. During his term he initiated many procedures, such as the Australian Orchid of the Year and AOC slide programs and co-ordinated arrangements for the Sixth World Orchid Conference in Sydney, 1969.

Discussions with Mr Hermon Slade led to the formation of the AOF. Since then many educational, scientific, and research projects have been financed by the AOF. A massive one was the translation and publication of Schlechter's *Orchids of German New Guinea*.

Mr McCraith is a major exhibitor and breeder of orchids and has registered 73 *Odontoglossum* alliance crosses. The genus *Disa* has been made popular in Australia by him. After years of trying he was able in 1986 to induce the Postal Department to make an orchid stamp issue ●

## Eleventh Australian Orchid Conference Teaspoons.

A limited issue of the above teaspoons will be available from mid March 1988. These teaspoons carry the Bicentennial and Eleventh Australian Conference logos.

These may be obtained from Mr Allan Alvis, 5 Knocklayde Street, Ashfield, NSW 2131.

Cost \$5.00 each plus \$1.25 packaging and postage.

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| D316CP | Den. (Sari Jane x Michael Sado) x Udomsri Beauty. Dark.  |
| D270CP | Den. Doreen 'Kamiya' x Autumn Show. Fine whites and bicolors.                                    |
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## CATTLEYAS DENDROBIUMS PHALAENOPSIS

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## AN F.C.C. AWARDED BY THE Q.O.S.

For the first time since its inception the Queensland Orchid Society at its November 1987 meeting awarded an F.C.C. to Paphiopedilum ST. SWITHINS 'Sunnybank'. This is a crossing of *Paphiopedilum rothschildianum* x *philippense* made by Ratcliffes in England, a remake of a cross that was first registered in 1901.

Subsequently two more plants made from this same crossing by Ratcliffes have been awarded H.C.C.'s by the Queensland Orchid Society, and two further A.M.'s from another crossing.

The resurgence of growing primary

paphiopedilum hybrids is as strong in Brisbane as it is in other parts of the world. Especially popular are multi-flowered crossings, in particular those with *Paphiopedilum rothschildianum* in the background. Unfortunately they can take many years to reach the mature size needed for flowering, but as we have proven the wait has been worthwhile.

The plant was grown in our usual compost of 2 parts medium fir bark, 1 part fine fir bark, 2 parts medium charcoal, and 1 part peanut shell; fertilized with 8 to 9 month osmocote, and a regular spray of wuxol applied.

*Rod Mackinney*



# IRA BUTLER TROPHY

To stimulate and encourage the advancement of Australian Native Orchid Hybrids.

This year entries were received from the following Societies and A.N.O.S. Groups:

A.N.O.S. SYDNEY: Autumn Show, R. Wheeldon, *Den. bigibbum* var. compactum x D. Tangerine. Spring Show, R. Wheeldon, *Sarc. Weinhart. Sarcanthanae* Show, S. Batchelor, *Sarc. Melba*.

A.N.O.S. WARRINGAH: Spring Show, T. Carter, *Pterostylis* Cutie 'Harold's Pride'.

A.N.O.S. FAR NORTH COAST: Spring Show, D. Lynch, *Den. Lynnette* Banks.

WOLLONGONG & DISTRICT N.O.S.: Spring Show, R. Wheeldon, *Sarc. Weinhart*.

N.O.S.S.A.: Spring Show, Mrs M. Fuller, *Den. Bardo Rose* 'Pink Delight'.

O.S.N.S.W.: Winter Show, B. J. Fletcher, *Den. (Sun Glow x Hilda Poxon)* 'Evelyn'. Spring Show, G. Errington, *Sarconopsis Lavinia* 'Dorothy'.

NORTH MORETON, Qld. O.S.: Winter Charity Show, M. & J. Rivers *Den. Gloucester Sands*.

ORCHID SOCIETY OF W.A. Winter Show, Mrs L. Rowe, *Den. Hilda Poxon*. Spring Show, J. Fleming, *Den. delicatum*.

ORCHID CLUB OF S.A.: Winter Show, R. & P. Rankin, *Den. Aussie Child*. Spring Show, Hills Family, *Den. Aussie Bonanza*.

TASMANIAN O.S.: Spring Show, M. Mitchell, *Den. Bardo Rose*.

Champion Australian Native Orchid Hybrid 1987: Sid Batchelor — *Sarcochilus Melba* — This was a beautifully grown plant, presenting several scapes of well presented fresh, crystalline flowers measuring 32mm across. The overall beauty of this plant demonstrates the perfection that is being sought and accomplished in our native hybrids.

\*\*\*\*\*

Greetings to all associated Societies and Groups. We were pleased to see some newcomers this year with some lovely plants and some new hybrids.

Thank you for your participation in our efforts to popularise our Native Orchid Hybrids and so help to preserve our orchid species in the wild.

Ruth Rudkin, Hon. Secretary  
Ira Butler Trophy Committee

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## LETTERS TO THE EDITOR

Dear Sir,

The Spring 1987 issue of the AOR referred to the recent appointment by the Orchid Society of NSW of four Emeritus Judges.

For the purpose of correctness of historical records it should be noted that the original OSNSW Judging Panel was formed on September 21, 1944 and comprised the following:

Messrs. E. A. Hamilton, Dr J. A. Vote, C. C. Hildebrandt, Trevor James, John Bisset, W. Fahey, P. A. Gilbert, L. F. Hawley, W. Palmer, W. Worth, S. C. James and Eric Hayes.

Alan Begg was appointed to the Panel subsequently, Alan Birdsall became an Associate Judge in 1947 and a Judge in 1949. Flank Slattery and Reg Trenerry were both appointed Associate Judges in 1951 and Judges in 1954.

*Graeme Banks*  
OSNSW Registrar

## BOOK REVIEW

### A guide to Growing Orchids on the Gold Coast

Published and Distributed by Southport  
and District Orchid Society  
Printed by Xerox Copy Centre  
Gold Coast

R.R.P. Soft cover \$7.95 plus postage

A book compiled by members of the Southport and District Orchid Society which will be useful to all orchid growers no matter where they grow their orchids.

It covers Paphiopedilums, Cymbidiums, Cattleyas, Vandas, Odontoglossum alliance, noble and hardcane dendrobiums, Australian Native epiphytes, lithophytes and terrestrials. Also covered is planning a bushhouse, control of pests and diseases, floral art and judging and showing orchids.

The qualities of this book that makes it a necessity, for novice and older grower alike, is the means by which each of the different genera are covered. A very brief history, light requirements, temperature range, humidity and ventilation, potting and repotting, pests and diseases.

Although the book does not contain any colour work, it does have excellent line diagrams of different genera and species some of which could be used for identification purposes.

A concise book written for the Queensland Gold Coast can be adapted for growing orchids anywhere.

This book, containing information which could take a lifetime to obtain, should be in the possession of all orchid growers and in orchid societies' libraries.

It can be purchased by writing to: The Secretary, Southport & District Orchid Society ●

## ADVERTISERS — WINTER ISSUE

The deadline for advertising copy is April 13. Your co-operation in meeting this deadline will be greatly assist A.O.R.'s publishing schedule and ensure that the magazine is published on time.

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# SOCIETY NEWS

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SOCIETY NEWS SOCIETY NEWS SOCIETY NEWS

## HASTINGS RIVER ORCHID SOCIETY FORMED 1964 AND STILL GOING STRONG IN 1988

In this year of 1988 when our country is celebrating 200 years as a nation, it might be an appropriate time for our Hastings River Orchid Society to look back over the years at our own beginnings as a society. On doing a bit of research I find that an inaugural meeting was held in the Oxley County Council's auditorium at 8 pm on Saturday, July 4, 1964 and approximately 70 people attended to form an orchid society — the meeting was sponsored by the Wauchope Garden Club and the Manning River Orchid Society (both clubs still active and doing well). The late Jack Penny was our first president with treasurer, J. Hinton and secretary, Norm Barlin. Norm Barlin served the society as a secretary efficiently for many, many years and, on retiring, was awarded life membership of Hastings. Mr and Mrs Barlin still reside in Wauchope.

Two of our most 'notable' and well-remembered members were Bill and Jean Cannons of Wayside Nursery who worked willingly and constructively for the young society, often filling the gaps in show benches with plants from their nursery. They later pioneered their now-famous sarcanopsis H.C.C. as an emblem for our badges, teaspoons, letterheads, etc. It is elegantly designed in blue enamel on silver. I understand Bill and Jean also did some successful hybridising of miniature and splash petal cattleyas but no one was interested and they were not accepted by the judging standards prevailing at that time. However, times change and these lovely miniatures with plenty of colour are now gaining popularity and are much sought after. Bill and Jean Cannons have now left the district and are enjoying their retirement — they were awarded life membership of Hastings.

It is interesting to note the gradual change in our show schedules reflecting the changing tastes of the growers. In the early years there was much emphasis on cymbidiums but this has now switched to natives, more classes of cattleyas, soft-cane dendrobiums, paphiopedilums and

many others — there is also a great interest in growing species orchids. On reading the 1975 president's annual report it is noted that "the Australian Orchid Council adopted standards for judging native species and hybrids, a move that was initiated by your Society three or four years back".

Hastings claims many native species growers of note — one in particular who takes all the prizes at shows with his marvellous kingianums, Alwyn Flanagan (hold that hat, Flanagan!!) and Harry Klose who, for years, have worked towards improving colour, shape and size of *Dendrobium kingianum*.

Rod Graham of Wauchope, also works with native orchids and others. Occasionally, Ted and Barbara Gregory of Merellen Orchids come down from their mountain fastness of Tambourine with slides and remembrances of the early days of orchid growing.

As with most societies the years vary and have their 'highs and lows' but

1972 appears to have been a 'high' when the first New South Wales Regional Conference of the Orchid Society of New South Wales, which was held in Port Macquarie, was successful and got a terrific write up in the Port News of 12/8/72 — I quote "The mayor of Port Macquarie made the point that this is the first time that a country society has hosted a conference of this type and that the Hastings River Orchid Society was very proud of this achievement . . ."

1982 was the year Hastings committee and members organised and staged the 6th NSW Regional Conference with many well known speakers from the orchid world including, S. Clemesha, B. and J. Cannons, H. Klose, Dr Andrea Millar, Ted Gregory and others. This conference was held at Wauchope High School in conjunction with the annual spring show of that year and was well attended.

In putting together a synopsis of this nature it is difficult to cover all the people

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release in Australia. 'PEACHES' is a protected plant under the  
NZ Plant Varieties Act, and may not be propagated without  
authority. Photographs of the flowers are in the Spring 1985 AOR.

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GIDGET 'ZUMA'

GREENOCK 'BRIGHT EYES'  
KATYDID 'CARAMEL'  
KENY 'NATO'  
LYNETTE 'ARTEMIS'  
MIMI 'LUCIFER'  
MIMI 'MARY BEA'  
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viable by simply being there with  
orchids, adding their support by pur-  
chasing raffle tickets, ladies who donated  
food for and prepared suppers, both men  
and women who gladly gave their time  
and effort to the setting up and dismant-  
ling of shows — without these members  
the society would have faded many years  
ago. However, one of the old brigade still  
with us is our present treasurer, Alan  
Garrett who was elected in 1966 (con-  
grats Alan on your many years of service  
to the society).

Our constitution emphasises friendship  
and growing and promoting orchids as a  
common goal and Hastings River Orchid  
Society is certainly a friendly, sociable  
country society. Thanks to our regular  
members the monthly meetings are  
colourful affairs with numerous orchids  
being benched for display and judging —  
one month was particularly spectacular,  
having at least 99 plants. Of course, we  
have our months of scarcity when not too  
many flowers are available but always  
manage a reasonably good display and  
our judges for the night are constantly  
confounded by the diversity of orchids  
they are expected to judge.

We have guest speakers when someone  
is available or, alternatively, slide  
programs on orchids borrowed from the  
Orchid Council — these are most infor-  
mative and entertaining as they often  
depict orchids in their natural habitat in  
various countries of origin.

We raise all our funds within the society  
by selling plants to members and raffles  
at our monthly meetings. These monies  
pay our annual expenses for the hire of  
the hall for meetings and the annual  
show, insurance, etc. Some of our  
member voluntarily sponsor prizemoney  
at our spring show and these donations  
are most acceptable and gratefully  
received. One outside sponsor is Howes  
Nursery of Beechwood with their annual  
donation.

We hold an annual Xmas party, a bus  
outing, trying to choose a different venue  
each year. We meet on the 2nd Friday of  
each month, rain or shine, winter and  
summer, in the Uniting Church Hall,  
Hastings Street, Wauchope at 7.30 pm.  
Supper provided. New members and  
visitors are always made welcome.

For many years Manning River Orchid  
Society and Hastings River Orchid  
Society were the only two societies in the  
area and, as orchids are somewhat fewer  
in winter, the two societies combined to  
stage a winter show, each society taking  
alternate years to host the show, one year  
in Taree, then in Port Macquarie. In  
recent years the Great Lakes Orchid  
Society, Foster and Port Macquarie  
Orchid Society were formed and these  
societies were included in the combined



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winter display. This year it is the turn of the Hastings River orchid Society to host the combined societies' mid-winter show.. We have chosen Settlement City as the venue and will stage the display from May 12, 13 and 14, 1988. We hope this will be a 'highlight' of the bi-centennial activities in the Hastings area.

## **2ND WA REGIONAL CONFERENCE**

Many months of hard work and organising came to fruition on the weekend of September 25, 26, 27 in 1987. The 2nd W.A. Regional Conference was hosted by the Bunbury Orchid Society and held in conjunction with their annual Spring Show.

The conference began on Friday evening with a cocktail evening and registrants show preview. Several private parties carried on until the early hours of Saturday morning. 40 Years of Orchids in W.A. was the title of the first paper presented by the Mr Harry Lodge, Chairman of the O.S.W.A. Judging panel and Life Member of the O.S.W.A.

Following a short morning tea break, Mr Bill Johnson of Glenwood Orchids, Vic, who readers will remember for his fertilising program, spoke on Optimising Fertiliser Efficiency. Saturday afternoon

found Mr Don Gallagher, President of the A.O.C. and proprietor of Parade Orchids S.A. converting cymbidium growers over to Phalaenopsis.

The presentation dinner on Saturday evening allowed registrants to make new and renew old acquaintances. Sunday was another full day with Dr Kingsley Dixon speaking on Terrestrial Native Orchids. Mr Alvin Bryant presented a paper on Cymbidium Flowering Logic and Mr Mark Wheatley of Chelsea Exotics showed slides of Orchids in the UK.

To our guest speakers we are grateful to you for giving W.A. orchid growers the opportunity to share your knowledge and experience. The time taken off from your respective nurseries to offer us information will well be remembered. Thank you.

To our sponsors we owe a great deal for the total prize monies of \$1,450 plus trophies. The larges amount to be offered to W.A. orchid growers. The public and exhibitors who braved the wet and windy conditions were rewarded with a truly spectacular display which will not be forgotten for a long long time. Grand Champion Orchid was owned by Mr Harry Lodge. This being his *Paphiopedilum maliopence*.

Reserve Grand Champion going to W.

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 MS559 Oncidium GOLDEN SUNSET x (TIGER x RAINBOW) ... \$3.50 in 2" pot  
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 MS481 Lc. TRICK OR TREAT x Lc. CHICKANERY ..... \$3.50 in 2" pot  
 AB450 Cattleya gaskelliana 'Alba' x Self ..... \$3.50 in 2" pot  
 RD265 Renanthera BROOKIE CHANDLER x Renanthera HISTROMONA  
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 MS506 Lc. EDMOND ROTHWELL 'Woodlawn' x C. guttata 'Prinzii'  
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and K. Cruickshank with *Cymbidium* Highland Mist 'Caroline'.

Champion section winners were: *Cymbidium*, Highland Mist 'Caroline', W. and K. Cruickshank; *Paphiopedilum*, *Paph maliopense*, H. Lodge; *Cattleya*, Malworth 'Orchidglade', L. and N. Munnings; Seedling, Zygo G B White x John Banks, G. Winter, Specimen, *Cymbidium* Narela 'Jennifer Gail', A. and V. Burgess; Champion Orchid other than *Cymbidium*, Paph, *Cattleya*, Zygo G. and B White x John Banks G. Winter; Champion Display, J. Fleming and R. Hunt; Champion Novice Orchid Narela 'Jennifer Gail', M. and L. Bartlett; Champion Orchid of Outstanding Colour, Lc Fiery x Lc Goldcrest x *C. aurantiaca*, H. and R. Teede; Champion Aust Native Orchid, *Caladenia filamentosa*, W. and K. Cruickshank.

Well done and thanks to all supporters.

E. Harwood  
 Hon. Sec.

### FOOTNOTE

It was my pleasure to attend the above excellently run conference. I had a most enjoyable weekend, as I am sure all registrants did. The hospitality of the Bunbury and OSA growers was outstanding. If you missed attending, then don't miss the next one (whenever that may be?)

Don Gallagher  
 President, Australian Orchid Council

## NORTH COAST ORCHID SOCIETY, NAMBOUR, INC.

The President and members of the North Coast Orchid Society, Nambour Inc. will honour Mrs Phyllis Smith of Montville for 20 years service as our Press Representative, at the February 22nd, 1988 meeting.

Dear Phyllis has always been a willing worker at Shows and meetings. She has lost count of the number of cups of tea she has produced over the last 25 or more years. In addition she was a reporter for

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the Suncoast Daily newspaper for many years.

Husband, Peter, is a foundation member and Phyllis joined a few years later. This very popular couple have lived at Montville, on the range behind Nambour for all of their married lives and have been at the forefront of many district activities. They are always willing to help other people.

We offer our congratulations to Phyllis on a job well done over the 20 years.

## NORTH MORETON QLD. ORCHID COUNCIL

North Moreton Qld. Orchid Council is progressing favourably along a planned path of cementing worthwhile friendships amongst the members of its 11 affiliated societies. Formed for this purpose and for the furtherance of interest in orchid growing as well as the preservation of our own native orchids by educating growers along these lines, it can boast a successful 3 years.

The Council has liased with Qld Orchid Society in providing several judges for society shows and their meeting nights. We conduct one show a year which is “The Charity Orchid Spectacular”, and

aids the Cystic Fibrosis Association. This year the show will be set up at Mount Coot-tha Botanic Gardens Auditorium on June 30 and will be staged on the 1st, 2nd and 3rd of July.

Our inaugural secretary produced a booklet known as “The Best Of The Bulletins” which has sold over 1500 copies in Australia and America. An ideal book for the beginner, with articles by our own local growers, written in simple language, it is still available, suitably priced at \$3.00 per copy but can be cheaper if ordered in bulk lots. Volume 2 is now in the pipe line and hopefully, will be on sale later this year . . . Watch for it!

On March 5 this year we will be staging a “workshops” featuring five guest speakers some of whom are from interstate. We are looking forward to a great day starting at 9am with morning tea followed by three guest speakers. After a break for a picnic lunch in the grounds of the TAFE College Norris Rd. Bald Hills two more guest speakers — we will close proceedings with afternoon tea.

We are looking forward to an exciting year in orchid growing and fellowship. We meet three times a year and each occasion is a picnic day hosted by a member society with morning and afternoon teas and lunch provided by that Society at a cost of \$4.00 to \$4.50 each,

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Ansellia africana. Spath chrysantha “yellow”. Laelia perrinii “Coerulea” x “Coerulea” blue.

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for the day. A guest speaker and visits to orchid houses in their area is an added bonus.

Joyce Smith Hon. Sec. N.M.Q.O.C.

## GROUP OF ENTHUSIASTS FORM WHAT IS BELIEVED TO BE THE FIRST PAPHIOPEDILUM SOCIETY IN THE WORLD

A group of paph growers including Harry Greaves, Errol Marshall, Barry Scriven and Phil Diamond have laid the foundations of T.A.P.S. — The Australian Paphiopedilum Society. This new society will be devoted entirely to all paphs, species and hybrids, frags, etc.

One of the purposes of the society is to further cultural research in paphs for the Australian environment, and communicate with paph growers Australia wide. It is planned that an informative newsletter be circularised to all financial members, and membership will be worthwhile just for the newsletter alone.

If you are interested in becoming a foundation member of this new club and are a paph enthusiast write for further details to Mr H. Greaves C/- Box 378 Cleveland Qld, 4163.

## NATURE COMES NATURALLY

Studying nature in minute photographic detail is a way of life for Ted Rotherham. Ted lectures in photography and takes photos for nature books as a sideline. He did the illustrations of *Australian Native Orchids in Colour*.

Ted recently gave a slide night at an ANOS Victoria meeting. Slides of terrestrial orchids were outstanding. A photo of *Arthochilus huntiana* included the pollinating agent, a Thynad wasp. Pollinating agent, a Thynad wasp. Pollination is effected by pseudo-copulation. A native bee was observed on *Spiranthes sinensis* subsp. *australis*, a beetle on *Prasophyllum elatum*, and the male ichneumon wasp on *Cryptostylis leptochila*. A member of the audience was heard to comment "that wasp has a grin all over its face".

A trick Ted has learnt about photographing pollinating insects is to place a cheesecloth bag over the plant the day before he wishes to photograph it. "You would be surprised" he said, "how many insects, attracted by the perfume, hover expectantly around." The next day he sets up his camera, focuses on the flower, and takes off the cheesecloth. Pollinators usually bombard the flower.

So now you know how to get those fantastic pollinator shots ●

AUSTRALIAN ORCHID REVIEW, AUTUMN 1988

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# SHOW DATES SHOW DATES

## QUEENSLAND

West Brisbane OS Inc. SPRING. Orchid and Plant Spectacular. Auditorium, Mt Coot-tha Gardens. Sat 24/9 to Sun 25/9. 9am-5pm, 9am-4.30pm.

Brisbane OS. AUTUMN. Supporting Qld School for the Deaf. Cornwall St (near P.A. Hosp.) Dutton Park. Sat 26/3 & Sun 27/3.

North Qld OS, Cairns. AUTUMN. Mothers Day Show. Westcourt Shopping Plaza, Mulgrave Rd. 3/5 to 7/5. 8.30am-5pm. WINTER. Cairns Agricultural Show. Cairns Showground, Mulgrave Rd. 20/7 to 22/7. 9am-10pm. SPRING. Golden Jubilee Show. Cairns Australian Football League Hall, Mulgrave Rd. 8/10 & 9/10. 5pm-10pm. In conjunction with 50th Anniversary dinner.

Darling Downs Orchid Association Inc. AUTUMN. QCWA Hall, 263 Margaret St. Toowoomba. Thurs 28/4 to Sat 30/4 (during green week) Thurs 8.30am-9pm; Fri 8.30am-9pm. Sat 8.30am-4.30pm. SPRING. TAFE College, Neil St Toowoomba, Sat 17/9 to Sat 24/9. Sat to Mon 8.30am-9pm; Sun 18th 9am-5pm; Sat 24th 8.30am-4.30pm (Held during Carnival of Flowers).

Redcliffe District OS Inc. AUTUMN Kipparing Shopping Village lower level. 26/4 to 30/4. Shopping hours. SPRING BBC Hardware Redcliffe 5/10 to 8/10. Shopping hours. SUMMER Kipparing Shopping Village lower level. 2/11 to 5/11. Shopping hours. All shows are closed shows.

Maroochydore OS Inc. SPRING. Maroochydore, 11/8 to 13/8. 9am-5pm.

Hervey Bay OS Inc. AUTUMN. Hervey House, Pialba Qld. (RSL club) 29/4 & 30/4. 9am-8pm Fri; 9am-3pm Sat.

The Queensland OS Inc. AUTUMN. Mt. Coot-Tha Botanic Gardens Auditorium. 8/4 to 10/4. 9am-5pm. SPRING. Riverside Ballroom, 42 Oxlade Drive, New Farm. 20/8 to 21/8. 9am-5pm.

Atherton Tableland OS. WINTER. Marylands Hall — Show Grounds, Atherton, 4/7 & 5/7. 9am-11pm & 9am-5pm.

West Moreton Orchid Group. AUTUMN. St. Pauls Cofe Hall, Limestone St, Ipswich. Fri 8/4 to Sun 10/4. Fri 9am-9pm; Sat 9am-5pm; Sun 10.30-5.30pm. SPRING. TAFE College, Byrne Street, Bundamba, Ipswich. Thurs 15/9 to Sat 17/9. Thur & Fri 9am-9pm; Sat 9am-5pm (subject to amendment) (part of Ipswich's Bi-Centennial Display).

Eastern District OS Inc. AUTUMN. Wondall Heights State School, Wondall Rd, Wynnum West. 19/3 to 20/3. 8.30am-5pm. SPRING. Venue as above. 3/9 to 4/9. 8.30am-5pm.

Gympie & District OS Inc. AUTUMN. Gympie Civic Centre, Mellor Street, 22/4 & 23/4. 9am-9pm & 9am-4pm.

Mackay & District OS. AUTUMN. Caneland Shoppingtown, Mackay. 14/4 to 16/4. 9am-5pm (Thurs & Fri) 9am-11am (Sat). SPRING. Venue as above. 29/9 to 1/10. Times as above.

Townsville OS. AUTUMN. Townsville City Administration Centre, Cnr. Walker & Stokes St. Townsville. Fri 8/4 to Sun 10/4. 9am-9pm (Sat &

Fri) 9am-5pm (Sun). WINTER. Mothers Day Show. Sunvale Shopping Centre, Elizabeth St, Altkenvale. 7/5. 8am-12 noon. SPRING. Townsville City Administration Centre. Fri 30/9 to Sun 2/10. 9am-9pm (Fri & Sat) 9am-5pm (Sun).

Sunshine Coast OS Inc. AUTUMN. Art Gallery of Civic Cultural Centre, Minchinton St, Caloundra. 7/4 to 9/4. 9am-8pm, 7/4 & 8/4. 9am-3pm 9/4. SPRING. No Spring Show as Orchid Expo in which STOCQ inc is involved, is on at Caloundra from 8/9 to 12/9.

Southport and District OS. AUTUMN. Nerang River Plaza, Station St, Nerang. 14/4 to 16/4. 14th & 15th 8am-5.30pm, 16th 8.30am to noon.

North Brisbane OS. SPRING. Mt Coot-tha Botanic Gardens Auditorium. 3/9 & 4/9.

Apsley OS Inc. AUTUMN. Community Hall, Wavell Heights, 7/5 & 8/5. SPRING. Community Hall Wavell Heights 17/9 to 28/9.

ANOS Gold Coast Group. WINTER. Gold Coast Show. 26/8 to 28/8. SPRING. Mudgeerabah Showground 8/10 & 9/10.

Ayr & District OS. AUTUMN. Coutts Hall, Queen St Ayr. First Week in May. SPRING. Venue as above. First Week in October.

Blackwater & District Orchid & Foliage Club. AUTUMN. Woolworths Shopping Centre. May.

Boyne Tannum Orchid & Foliage Society. AUTUMN. Professional R.E. Bldg. Tannum Sands 5/8 to 9/8.

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# SHOW DATES

Bribie Island OS. SPRING. RSL Hall, Bongaree  
Bribie Is. October.

Bundaberg OS. WINTER. Civic Centre,  
Bourbon, 4/5 to 7/5.

Caboolture OS. WINTER. Civic Centre,  
Caboolture. 14/7 to 16/7.

Capricorn Orchid & Foliage Club. WINTER.  
Lawrence Showroom, Richardson Rd, Nth Rock-  
hampton. 25/3 to 27/3.

Childers & Isis District OS. SPRING. Isis  
Cultural Centre, Churchill St, Childers. 30/9 &  
1/10.

Chinchilla Orchid & Bush-house Assn SPRING  
Civic Centre, Heeney St, Chinchilla, 8/9 to 10/9.

Darling Downs Orchid Assn. AUTUMN CWA  
Hall, Margaret St, 28/4 to 30/4. SPRING. Tafe  
College, Neil St, Toowoomba. 17/9 to 24/9.

Emerald Orchid & Foliage Society. AUTUMN.  
Easter Show. Star Arcade, Emerald. SPRING.  
September Show. Village Shopping Centre,  
Emerald.

Gladstone Orchid & Foliage Society.  
AUTUMN. Easter Show. Anderson Motors,  
Yarrow St, Gladstone. SPRING. Gladstone Mall.

Glasshouse Country OS. SPRING. School of  
Arts, Simpson St, Beemah. 29/9 to 1/10.

Herbert River Orchid & Allied Plants Society.  
AUTUMN. Annual Field Day. 17/4. SPRING.  
3rd week in October.

Innisfail OS. AUTUMN. Saturday before  
Mothers Day.

Ipswich OS. AUTUMN. RSL Hall Nicholas St.  
9/4 & 10/4. SPRING. Tafe College, Bundamba,  
15/9 to 17/9.

John Oxley District OS. WINTER. Mt Coot-tha  
Botanic Gardens Auditorium, 30/7 & 31/7.

Mareeba & District Orchid & Pot Plant Culture  
Society. AUTUMN. RSL Hall, Byrnes St,  
Mareeba, 7/5 & 8/5. SPRING. Coles Shopping  
Square.

Maroochydore OS Inc. WINTER. Venue to be  
decided. 11/8 to 13/8.

Maryborough District OS. SPRING. St Pauls  
memorial Hall, Adelaide St, Maryborough. 5/10 &  
6/10.

Mt Isa Orchid & Foliage Plant Society SPRING  
Bingarra Festival Civic Centre, 1st weekend Sept.

Noosa District Orchid & Foliage Society.  
AUTUMN. May Display. CWA Hall, Cooroy.  
20/5 & 21/5. WINTER. Venue to be decided 19/8  
& 20/8.

North Coast OS Nambour Inc. AUTUMN. Ray  
Grace's Mitsubishi Showrooms, Nambour. 12/5 to  
14/5.

Orchid Species Society. SPRING. Mt Coot-Tha  
Botanic Gardens Auditorium. 17/9 & 18/9

North Moreton Queensland Orchid Council.  
WINTER. Charity Orchid Spectacular. Mt Coot-  
tha Auditorium. 30/6 to 3/7.

Pine Rivers OS. AUTUMN. Apsley Hyper-  
market. 28/4 to 30/4. WINTER. Kensington  
Shopping Village. 26/5 to 28/5.

Redlands OS. AUTUMN. CWA Hall, Shore St  
Cleveland. 23/4 & 24/4. SPRING. CWA Hall,  
Shore St, Cleveland, 10/9 & 11/9.

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# SHOW DATES SHOW DATES

Rockhampton OS. AUTUMN. St Paul's Hall, William St, Rockhampton. 15/4 to 17/4 SPRING. Venue as above. 23/9 to 25/9.

Sub-Tropical Orchid Council Qld. SPRING. Orchid Expo '88, Civic Cultural Centre, Caloundra. 8/9 to 12/9.

Townsville District Orchid & Allied Plant Society. AUTUMN. Willows Shoppingtown, Kirwan, 5/5 to 7/5. SPRING. Same venue. 1/9 to 3/9.

West Brisbane OS. SPRING. Mt Coot-Tha Botanic Gardens Auditorium 24/9 & 25/9.

Wynnum Manly District OS. SPRING. RSL Hall, Melville Tce, Manly. 24/9 & 25/9.

## NEW SOUTH WALES

Coffs Harbour OS. WINTER. Park Beach Shopping Plaza Wed 15/6 to Sat 18/6, shopping hours. SPRING Palm Centre Coffs Harbour City Mall. One week Sept. (Dates TBA) Shopping Centre Hours 9am-5.30pm, Thurs night 9pm.

Hastings River OS. AUTUMN. Bicentennial Combined Societies' Mid-Winter Show. Settlement City, Port Macquarie. 12/5 to 14/5 9am-6pm. In conjunction with Manning River, Great Lakes &

Port Macquarie Societies. SPRING, 23rd Annual. a CWA Hall, High Street, Wauchope, Fri 12-8pm. Sat 9am-6pm.

Casino and District OS Inc. AUTUMN. RSL Hall, Canterbury Street, Casino. 29/4 to 30/4. 9am-6pm & 9am to 4.30pm. Trophies 4pm 30/4. SPRING. Venue same as above. 23/9 to 24/9, 9am-6pm & 9am-4.40pm. Features Champion Orchid of Summerland. Trophies 4pm 24/9.

Tamworth OS Inc. SPRING. K Mart Plaza, 22/9 to 24/9. 10am-9pm (22/9); 9am-9pm (23/9) 8am-2.30pm (24/9).

Newcastle Combined OS. AUTUMN. Lake Macquarie Fair, Mount Hutton. 20/4 to 23/4. 8.30am-5pm. WINTER. Stockland Mall, Jesmond Shopping Centre, 20/7 to 23/7. 8.30am-5pm. SPRING. Lake Macquarie Fair, Mount Hutton. 31/8 to 3/9 1988. 8.30am-5pm.

North Shore OS. WINTER. Lemon Grove, Chatswood Dates & Times TBA — No details on Spring Show.

Nambucca Valley OS. AUTUMN, Macksville Scouts Hall, Partridge St, Macksville. Fri 6/5 to Sat 7/5. 9am-8pm (Fri), 9am-4pm (Sat). SPRING, venue as above. Fri 2/9 to Sat 3/9. 9am-8pm (Fri) 9am-4pm (Sat).

Alstonville & District OS. SPRING. RSL Hall Bugden Ave, Alstonville 3/9.

Ballina & District OS. SPRING. The Player's Theatre, Swift St, Ballina 11/9 to 12/9.

City of Lismore OS. AUTUMN, Lismore City Hall, 22/4 to 23/4. SPRING, venue as above. 8/9 to 11/9.

Far North Coast District Orchid Council. WINTER. Lismore Shopping Centre. 14/7 to 16/7.

Evans Head and District OS. SPRING. Woodburn Memorial Hall. Pacific H'way, Woodburn 16/9 to 18/9.

Tweed District OS. Autumn. Tweed Heads Shopping Mall 5/5 to 7/5. During shopping hours. SPRING. Sunnyside Shopping Centre, October. During shopping hours.

OSNSW Ltd. WINTER. Roselands Shopping Centre. Mon 13/6 to Sat 18/6. Normal shopping Hours — 4pm Sat 16/6. SPRING. Royal Botanic Garden Sydney. 18/9 to 25/9. 9am-5pm daily. — 11th Aust Orchid Conference.

Blue Mountains & District OS. SPRING. Melrose Hall, Cnr, Park St & Great Western Highway, Emu Plains. Sat 10/9 to Sun 11/9. 12-5pm & 9am-4pm.

Parramatta OS Inc. WINTER. Seven Hills Shopping Centre, Wed 27/7 to Sat 30/7. Shopping hours. SPRING. Carlingford Court Shopping Centre Monday 5/9 to Sat 10/9. Shopping hours.

St George OS. WINTER. Uniting Church Hall, Bay Street, Rockdale. 2/2 7pm-10pm. SPRING Show & Trophy Night, venue as above, 6/9 7.30-10pm. Visitors welcome.

Sydney OS. WINTER Remembrance Hall, 220 Lakemba Street, Lakemba 9/6 8-10pm. STRATHFIELD PLAZA SHOW, Strathfield Plaza. The Boulevard, Strathfield 22/8 to 27/8 normal shopping centre hours. SPRING. Remembrance Hall, 220 Lakemba Street, Lakemba 8/9 8-10pm.



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# SHOW DATES SHOW DATES

## VICTORIA

Ringwood OS Inc. WINTER Nth Blackburn Square Shopping Centre, Springfield Rd, Nth Blackburn. 9/8 to 13/8. 9am-6pm incl. late night shopping Friday. SPRING. Eastland Shopping Centre, Maroondah H/way, R/wood. Mon 3/10 to Sat 8/10. Open shopping hours, incl late night, Thurs & Fri nights.

Mornington Peninsular OS Inc. AUTUMN. Karingal High School, Ashleigh Ave, Frankston, 30/4 to 1/5. Sat 9am-5pm. Sun 10am-5pm. Professional growers stalls, plus club stands.

Hamilton Orchid Club. SPRING. 7th October. Details — Secretary: B. Simonds, 78 King Street Hamilton 3300. (055) 72 2639.

Melbourne Eastern OS Inc. WINTER. St John's Parish Centre, Burke Rd, Camberwell. Normal monthly meeting, Mon 29/8. Featuring Paphiopedilum Championship. SPRING. World of Orchids 1988. Mechanics Institute, Drummond St, Oakleigh. Thurs 6/10 to Sun 9/10. 6/10, 7/10, 8/10 9am-9pm. Sun 9/10 9am-5pm.

Victorian Orchid Club. WINTER. Parkmore/Kesborough Shopping Centre. 1 week - July. Shopping hours — late Thurs & Fri nights. SPRING festival. Venue & hours as above. 1 week - July. SPRING SHOW venue to be advised, 3 days 10am-7pm.

Midlands OS Inc. SPRING. Bicentennial Spring Orchid Show. Library Hall, Barker St, Castlemaine 3450. 21/10 to 23/10. 21st 12-9pm; 22nd 10am-9pm; 23rd 10am-4.30pm.

## SOUTH AUSTRALIA

Northern & Eastern Districts OS. WINTER. St Philips Parish Hall, Galway Avenue, Broadview, SA 5083. Fri 22/7 to Sat 23/7 10am-7pm. SPRING. Same venue. Thurs 1/9 to Sat 3/9, 10am-8pm.

Orchid Club of S.A. AUTUMN. Catholic Hall, Portrush Rd, St Georges, SA. 28/5 to 29/5. 10am-4pm — traditional table, Devonshire tea. WINTER. St Peters Town Hall, Payvenham Rd St Peters, SA. 9/7 to 10/7, 10am-4pm — traditional table, Devonshire tea. SPRING. Spring Show in Conjunction with Royal Agricultural & Horticultural Society of SA Show, Showgrounds, Wayville. 2/9 to 10/9. 9am to 9pm & 10am to 6pm on 4/9 — traditional table, potting demonstrations \$1,000 prize for grand champion.

The S.A. Orchidaceous Society Inc. AUTUMN. Royal Deaf Society Hall, 262 South Tce, Adelaide. 8pm to 10.30pm. WINTER Thebarton Community Hall, cnr South & George St, Thebarton. 30/7 to 31/7. Sat 10am-6pm Sun 10am-5pm. SPRING. Westfield Shoppingtown, Tea Tree Plaza Shopping Centre, Mobery. 5/9 to 10/9 9am to 5.30pm. Thurs till 9pm.

Whyalla Orchid Club AUTUMN. Westland Shopping Centre, Whyalla SA. 27/7 to 30/7. 8.30 am to 5.00 pm. Thurs & Fri till 9pm. WINTER. Whyalla Agricultural Show, Jubilee Park Show-

ground, Whyalla. 20/8 to 21/8, 9am-10pm. Non members of W.O.C. may exhibit nominations to be lodged with the society before 18/8. SPRING. Westland Shopping Centre, Whyalla, 24/9 to 1/10. 8.30am-5pm Thurs & Fri till 9pm.

## TASMANIA

Tasmanian OS Inc. AUTUMN. Westpac Bank, 38 Elizabeth St, Hobart. 24/5 to 27/5 10am-4pm. SPRING. Town Hall, Macquarie St Hobart. 30/9 to 2/10. Fri 1pm-9pm, Sat 9am-9pm, Sun 9am-5pm.

Orchid Society of North Western Tasmania. SPRING. Civic Centre, Burnie, 7/10 to 9/10. 10am-9pm. Judging Fri morning, 7/10.

Launceston OS Inc. SPRING. Windmill Hill Memorial Hall, High St, Launceston. Fri 30/9 to Sun 2/10 — Fri 2pm-9pm, Sat 10am-9pm, Sun 10am-5pm.

## NORTHERN TERRITORY

Nightcliff Os Inc. AUTUMN. Royal North Australian Show, Darwin Show Grounds. 21/7 to 23/7. WINTER. Darwin Garden Show. Darwin Botanical Gardens 4/8 to 7/8.

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# Australian Orchid Review



WINTER 1988



# Botany Bay Orchids

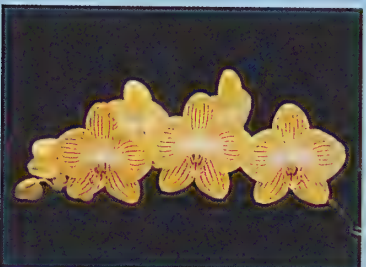
FLASKS READY FOR JUNE, 1988



Phal. Orchid World 'Bonnie Vasquez'  
AM/AOS - Silver/JOGA - Gold/12th WOC



Phal. Zuma Winter White  
'Maria Vasquez'



Phal. Bonnie Vasquez  
'Zuma Valley' FCC/AOS



Phal. Zuma Red Eye  
'Bonnie Vasquez' AM/AOS



Phal. Carmela's 'Gem'  
'Zuma Canyon'

## WHITE

- 8618 Margo 'Zuma Canyon' X Buena Flora 'Suzanne' AM/AOS
- 86541 Dtps. Orglade's Puff 'Samuel Loeb' X (Malibu Carnival X Kauai Monarch) #1
- 86582 (Dtps. Double Trouble X Dtps. Orglade's Blonde Belle) X Aubrac 'Q603'
- \* 86626 Florida Snow 'Frank's Choice' X Spitzberg 'Krull-Smith'
- \* 86628 Florida Snow 'Frank's Choice' X (Donna Rigg X Jimmy Hall)
- \* 86634 Florida Snow 'Frank's Choice' X Chamonix 'Ponkan's Big White'

## WHITE/RED LIP

- 86576 Quintana Roo Dunne 'Alice' X (Dtps. Alice Loeb X Phal. Zuma Firefly) 'Poco Loco'
- 86585 Dtps. Festivity 'B' X Glad Melinda 'Poco Loco' (miniature)
- \* 86625 Bright Lights 'Vegas' X Line Renaud 'B-32'
- \* 86632 (Malibu Felicity X Malibu Lipstick) X Donna Sitton AM/AOS

## PINK

- 86536 Melinda Nan 'Capitola' X Scaramouche 'Galaxie' AM/RHS (Pastel pinks, spots)
- 86538 Spring Silk 'Tropical Pink' X Tungku Afzan '2nd Best' AM/AOS (Medium pink, red lip)
- 86539 Herbert Hager 'Sal Loeb' X Tungku Afzan '2nd Best' AM/AOS
- 86543 Spring Silk 'Tropical Pink' X Rosy Flora 'Poco Loco'
- 86558 Zuma Champion 'Home National' X Joline 'Lisa'
- 86562 Enchantress 'Rusk' X Lippegruss 'Rusk'
- 86600 Abendrot 'Krull-Smith' X Abendrot 'Fantastic' AM/AOS
- \* 86615 LIPPEGRUSS (Lippstadt 'Rosy' X Abendrot 'Fantastic' AM/AOS)
- \* 86622 In the Pink 'Sunnybrook' X Joyau 'Suzanne'
- \* 86629 Zauberrose 'Drull-Smith' X Line Renaud 'Krull-Smith' (Pink, red lip)

## STRIPED

- 8624 Zuma Happiness 'Zuma Canyon' AM/AOS X Dtps. Orglade's Party Magic 'Zuma Canyon'
- 8642 Chickasaw 'Zuma Canyon' X (Proud America X Eva Kruze) 'Zuma Canyon'
- 86546 Zuma Chorus 'Zuma Valley' HCC/AOS X Tungku Afzan 'Poco Perfection'

## YELLOW - GREEN

- 8603 *venosa* 'Zuma Creek' X Mary Vance 'Zuma Canyon'
- 8605 Heart Beat 'Zumita' X *venosa* 'Zuma Canyon'
- 8606 Zuma Winter White 'Zuma Valley' X George Vasquez 'Green Meadow' AM/AOS
- 8649 Goldiana 'Zuma Canyon' AM/AOS X Pretty Cute 'Zuma Canyon'
- 8658 Goldiana 'Zuma' HCC/AOS X Abendrot 'Zuma Royal' (yellow-gold)
- 86529 Miami Sunrise 'Lemon Drop' X Pinwheel 'Poco Loco' HCC/AOS (yellow Stripe)
- 86553 *stuartiana* 'Sal's Choice' X Miami Sunrise 'Sunny Skies' (yellow novelty)
- \* 86633 Florida Snow 'Frank's Choice' X Hausermann's Gold Cup 'Everlasting' (yellow-green)

## SPOTTED

- 8631 Samba 'Zuma Canyon' X (Scherzo X Joline) 'Zuma Bonita'
- 8651 Carnival 'Bonsall' AM/AOS X Summa 'Zuma Canyon' HCC/AOS
- 86531 Charisma 'Pinkie' X Glad Melinda 'Poco Loco' (miniature)
- 86532 Cassandra 'Santa Cruz' X *stuartiana* 'Sal's Choice' (miniature)
- 86588 Dtps. Alice Loeb 'Alice' X Phal. Scaramouche 'Galaxie' AM/RHS
- \* 86609 Elise de Valec #4 X Coquinette 'Krull-Smith'
- \* 86614 Cassandra 'Woody' X Capeline 'Krull-Smith' (miniature)
- \* 86624 Be Glad X Elise de Valec 'The King' (miniature)

## NOVELTY

- 86530 *stuartiana* 'Larkin Valley' AM/AOS X schillerana 'Poco Loco' (spots)
- 86540 Zuma Chorus 'Zuma Valley' HCC/AOS X Scaramouche 'Galaxie' AM/RHS (miniature - spots, stripes)

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## THANKS

There has been a strong positive response to the new format Australian Orchid Review. Increased subscription circulation in Australia and Overseas, excellent sales increase at the newsagents and a most positive response from advertisers. In fact we've been overwhelmed with advertising. A continuing pattern of increased response will mean a big increase in pages to ensure a fair balance of editorial and advertising.

PAUL KELLY  
Publisher

## Cover Story

*Paphiopedilum primulinum*. The most distinctive, because of its colour, of the sub-genus *Cochlopetalum*. Discovered by Liem Khe Wie on Gunung Leuser (Mount Leuser) in 1972.

The plant was grown by the author, Roger Kramer and photographed by Salvador Costelo.

# Australian Orchid Review

Volume 53 — No. 2 WINTER 1988

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# Orchid Hybridising and Lycaste Development

Fred and Doris Alcorn

Having accepted an invitation to give a  
talk for the World Orchid Symposium  
held at Hiroshima, Japan, last year on  
the Subject "Orchids In Future" I  
decided that hybridising held the key to  
development of orchids in the future.

The Symposium was held on the last  
three days of the 12th World Orchid  
Conference so that many of the world  
authorities could attend thus giving the  
Chairman of the W.O.C., Dr David H.  
Brown (USA), Chairman of RHS  
Orchid Committee, Hon. Alasdair  
Morrison (Great Britain) as well as other  
distinguished guests, the opportunity of  
representing the World Council at the  
World Orchid Symposium.

We were given a civic reception by the  
Mayor of Hiroshima City, Mr Takeshi  
Araki. The first two days were given to  
lectures by scientists, commercial  
growers or amateur enthusiasts. The  
third day we visited Hiroshima Botanic  
Gardens where further words of  
welcome were extended. Our congratula-  
tions to Dr Tanaka and Dr Kondo for  
the successful management of the  
Symposium!

As an established hybridiser of some  
years experience and after making over  
130 *Lycaste* crosses I have proved that  
the most important factor of hybridising  
is dominant parents — be it animal or  
plant.

When I began experimenting with  
pollination I had little or no information  
of any potential *Lycaste* clones. After  
years of trial and error I found *Lyc.*  
*Koolena* or *Lyc. Macama* clones crossed  
with an ordinary hybrid or species  
proved to have the dominant influence on  
breeding. When returning to species for  
new genes in your pool, endeavour to get  
the best possible as I have found a great  
variation in many species.

After flowering a few, select the best for  
your programme of line breeding; pro-  
gress is slow as it takes five years from  
pollination to flowering and this requires  
patience and perseverance. Although a  
cross is successful it does not mean you  
can use parents of the same name and  
gain similar results. Each parent has a  
certain quality that has blended to make  
the success.

The *Lyc. Koolena* cross was the  
beginning of our progress in hybridising,  
then followed by the famous *Lyc.*  
*Macama* cross. The *Lyc. Macama* cross  
which has proved so outstanding has  
produced many shades of pink to dark  
reds such as 'Jocelyn' A.M. AOC-NSW,  
'Doris May' HCC AOC-NSW, 'Princess'  
HCCNSW, 'Carline', 'Radiance', 'Yvonne'  
and others. The *Lyc. Koolenas* and *Lyc.*  
*Macamas* have also gained awards and  
many championships. I believe these two  
crosses to be the best made so far in  
Australia — a few have proved excellent  
parents. Several other crosses have  
shown great promise such as *Lyc.*  
*Wyuna*, *Lyc. Kawana*, *Lyc. Gyra*, *Lyc.*  
*Cooma*, *Lyc. Karina* and *Lyc. Sunset* —  
just to name a few.



*Paph. Bilambil 'Form 1'*

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*Lyc. Karina 'Tracy'.*

We have used the following species — *Lyc. aromatica*, *Lyc. cruenta*, *Lyc. denningiana*, *Lyc. deppiei*, *Lyc. dowina*, *Lyc. lanipes*, *Lyc. locusta*, *Lyc. macrophylla*, *Lyc. xanthochiela* (a sub species of *macrophylla*). Whilst these have smaller flowers and flower freely, many retain their perfume and this is an added attraction in the sale of orchid pot plants.

It is good to have now reached the stage where we can look forward to stabilising some of the desired qualities in hybridising such as broadening the sepals, producing new colours, endeavouring to reduce the furling of the petals and increasing the number of flowers per bulb. By accomplishing this we will have done what has been achieved over the last 20 years with *Cymbidiums*, *Phalaenopsis*, *Paphiopedilum* etc. In studying the species you will observe that many have the open petals, hence I use the term 'open petal type' whilst others such as *Lyc. skinneri* folded petals. However, I intend to continue breeding both types as there is an obvious attraction to both. Many of our judges are now appreciating the 'open petal type'.

As one looks at *Lycaste skinneri* "Queen of the Genus" it is easy to see why this species has set the standard of size and form for the most modern hybrids. Few hybrids reach the perfection of size, form and colour of this

species and it was these qualities which dictated the path followed by the hybridisers from the earlier period. Certainly the finest varieties of the future will be ones raised from seed using selected parents with *Lyc. skinneri*.

We are indebted to the late Sir William Cooke and his daughter, Mrs Betty Cooke Garton of Wyld Court Orchids, England in the early development and progress of the genus *Lycaste*. Since then McBeans of England, in the 1950s made the famous *Lyc. Auburn* cross which has proved to be the foundation of many outstanding crosses. Paul Gripp of Santa Barbara Orchids (USA) and Marie and James Riopelle of Portland (USA) have made great progress especially with *Lyc. skinneri* and other crosses.

We in Australia were fortunate with our first *Lyc. Koolena* cross (*Lyc. Auburn* x *Lyc. skinneri*) as this produced many beautiful pinks and reds. This cross was first made by late John Ezzy and repeated by the late Leo Giles; then followed *Lyc. Shoalhaven* made by John Apperley. The late Athol Bell was a firm believer in sibling crosses and made many crosses using mainly *Lyc. Koolenas* and *Lyc. Shoalhavens*; he made the *Lyc. John Ezzy* cross (*Lyc. Shoalhaven* x *Lyc. Koolena*) in memory of his great friend. During 1970 I made a *Lyc. Macama* cross (*Lyc. Koolena* x *Lyc.*

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*Lyc. Cooma 'May'*

Sunrise) — these hybrids have won  
many awards and championships and are  
known world wide.

Listed hereunder are a few of the  
hybrids registered over the last 10 years:  
*Lyc. Macama* — *Lyc. Koolena* 'May'  
HCC X 'Sunrise Ena'. This cross gained  
the "Quality Award" — 12 seedlings  
from the same pod.

*Lyc. Wyuna* — (*Lyc. Macama* 'Doris  
May' HCC X *Mathiasiae*). We only  
had 18 seedlings all pale green with a  
pink flush, on long stems, all stand erect,  
strong in texture and open petals.

*Lyc. Gyra* — (*Lyc. Koolena* 'May'  
HCC X *Lyc. Jason*). Various colours,

many good reds with pure red lips. A  
number of these flowered early May.  
Have won championships.

*Lyc. Cooma* (*Lyc. Aquila* 'Gem' X  
*Lyc. xanthochiela* sub-species *macro-  
phylla*). Yellow with small brown spots,  
heavy texture, good stems and long  
lasting.

*Lyc. Karina* — *Lyc. Macama* 'Doris  
May' HCC X *Lyc. Shoalhaven*). First  
cross made by Robert Bell. I gave him the  
pollen and have since repeated this cross.  
Near white to pinks, good shape and  
texture. Best one *Lyc. Karina* 'Tracy'.

*Lyc. Macama* — (*Lyc. Koolena* 'Elva'  
HCC X *Lyc. Sunrise* 'Ena'). This is a

repeat of *Macama* cross using a different  
*Lyc. Koolena*. First flowering. Whites to  
pinks, good quality. Looking forward to  
next flowering.

*Lyc. Kiama* — (*Lyc. Macama* 'Doris  
May' HCC X *Lyc. Koolena* 'May'  
HCC). Near whites to pinks some good  
flowers. One of these won the Champion-  
ship at the last New Zealand Conference  
Show.

*Lyc. Sunset* — New cross *Lyc. John  
Ezzy* SM 10th W.O.C. x *Lyc. Koolena*  
'Sunset' SM. Pinks to dark reds, some  
very good flowers.

We have introduced species and second  
cross species genes into our pool and  
have followed up with a dominant *Lyc.*  
*Koolena* or *Lyc. Macama* parent. These  
should prove interesting and we look  
forward to the results. A few of the best  
parents from overseas, including the  
famous *Lyc. Wyld Court* 'Sir William  
Cooke', have been blended with some of  
our *Lyc. Koolenas* and *Lyc. Macamas*  
and will also be worth watching!

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**Blc. Toshie Aoki 'Robin'** HCC/AOS (100mm pots, \$15 ea). Large bright lemon yellow with red tips on sepals and petals.

**Blc. Toshie Aoki 'Blumen Insel'** AM/AOS Imported plants on 3rd growth in 60mm tubes, \$30ea). Large bright yellow with crimson tips and lip. Qual. Str. Catt. p157.

**Blc. Toshie Aoki 'Pizazz'** AM/AOS X Blc. Toshie Aoki 'Robin' HCC/AOS (50mm tubes, \$3.50 ea). Large yellow to peach.

**Blc. Blumen Insel 'Jack Queen Aoki'** AM/AOS x Blc. Toshie Aoki 'Pizazz' AM/AOS (50mm tubes, \$3.50 ea). Large gold and sunset.

**Blc. Malworth 'Orchidglade'** FCC/AOS x Blc. Toshie Aoki 'Robin' HCC/AOS (50mm tubes, \$3.50 ea). Large bright yellow.

**Blc. Golden Embers 'Chris'** AM/AOS X Blc. Toshie Aoki 'Pizazz' AM/AOS (50mm tubes, \$3.50ea). Large yellow to orange.

**Blc. Cadmium Light 'Sweet Lime'** AM/AOS x Blc. Toshie Aoki 'Robin' HCC/AOS (50mm tubes, \$3.50ea). Large yellow to chartreuse.

**Lc. Hawaiian Fantasy 'Dora'** x Blc. Toshie Aoki 'Pizazz' AM/AOS (50mm tubes \$3.50ea). Medium pastels and lemon.

**Blc. Toshie Aoki 'Robin'** HCC/AOS x C. intermedia Aquinii (50mm tubes, \$3.50 ea). Medium yellow and pastels.

**C. Penny Kuroda 'Spots'** x Blc. Toshie Aoki 'Pizazz' AM/AOS (50mm tubes, \$3.50ea). Medium pastel and cerise.

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# PHALAENOPSIS CULTURE: flower induction

Bob Gordon

The following article is condensed from a section in a new book edited by Bob Gordon, *Phalaenopsis Culture: A Survey*. The material is based on responses received from 150 of the world's best phalaenopsis growers.

## ABOUT PHALAENOPSIS FLOWER INDUCTION AND THE SURVEY

What special steps do you take to induce flowering?

I don't think I can improve on E. (Woody) Carlson's response to this question. There is 35 years of astute phal watching. Hugo Freed has more words of wisdom.

Most growers make no deliberate attempt to control flowering. There is a lot to be said for not tinkering with nature, but knowing how is a handy tool.

Items from the menu for international flower induction include: (1) lower the night minimum temperature; (2) raise the light; (3) lower the humidity and reduce watering; (4) feed Epsom salts (magnesium sulfate); (5) feed high phosphorus; (6) feed less (or no) nitrogen; (7) increase air circulation; (8) under artificial lighting, shorten the day; or (9) do nothing.

I'm a little puzzled by the comments of Bob Dadd and other British growers who say their problem is not getting phals to spike, but is in keeping them from spiking year round. Their green-house temperature ranges appear to be the same as elsewhere; their daylengths vary more than the warmer latitudes ranging from longer summer days to shorter winter days . . . no clues there; maybe it's the water. Ideas, anyone?

(Maybe the phals don't dare disappoint their owners; the Brits have got to be the flower-lovingest people on earth . . . as I found in the 3 years I lived there in the early '50s. I think that's where my affection of flowers came from.)

Note under (8) above on the menu of items inducing flower spiking that the artificial light growers shorten the plant's day to induce spiking. That sounds like a statement that the phals under lights are photoperiodic or that they respond to an artificial autumn by spiking. I've heard several reliable sources say that, but I've never seen evidence to support the idea.

Could it be that phals grown under artificial lights respond to a different seasonal signal? Maybe the primitive forms from which the phals sprang were

indigenous to more temperate latitudes where greater daylength swings signal the changes of the season and of flowering times at a time when more ultraviolet light was reaching the earth . . . and the phals under lights 'remember'?

Or are they responsive to a reduced total daily exposure to ultraviolet radiation to which they may have become accustomed under artificial lighting?

Information regarding these questions would be of considerable interest to phal growers in the temperate zones and would be welcomed for inclusion in future revisions of this book . . . or, I'm



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How far in advance of the Desired blooming date do you take these special steps?

From 90 to 125 days. Woody Carlson's program offers a means of adjusting the interval within these general limits.

— Bob Gordon

## SELECTED RESPONSES

### What special steps do you take to induce flowering?

(Mid-Atlantic Coast US) Under artificial lighting... I summer plants outside... leave them out until temps regularly go down into the low 50's at night. At this time, I provide more light and less water. — M. Bowell

(Central California US) In addition to cooling the plants, I 'dose' the reluctant spikers with Epsom salts for 3 weeks. — R. Buchter.

(California Coast US) During the months of October and November, I lower my night temperature to 55°F for a period of 2 to 3 weeks to help accelerate the initiation of flower spikes.

Relative humidity is lowered to 30-40 per cent during this period and plants are watered less often.

Also, note that during this time light intensity is very important. With a light intensity of 1,500 footcandles and over, initiation of flower spikes is decreased. Decreased light intensity of under 1,200 footcandles increases the initiation of new flower spikes.

In addition, it is important that the plants have an ample supply of magnesium in the form of Epsom salts available to them during this time. This is a very important part of the successful flowering of the Phalaenopsis plants as a low level of magnesium sulfate at this time correlates to poor flower production and the number of flowers per stem. Epsom salts may be applied at a rate of

one level teaspoon per gallon of water every 2 weeks.

Within 85/95 days thereafter on the average, the first flower on the secondary spike will open. These flowers are sometimes smaller than normal as is the case with primary spikes which are allowed to carry too many laterals. Cropping is usually only done once on a spike because, with each additional cropping, the blooms tend to get smaller.

**Cropping (Second Spikes)** Mature Phalaenopsis plants can be flowered once or twice a year, the blooms lasting up to 3 months or longer. When the last of these blooms starts to wilt, the flower spike can be cut back to about an inch above the 3rd or 4th node up from the base of the spike. When this is done, one of the lower nodes will initiate a secondary spike within 2 to 3 weeks.

**Flower Control** If flowers are needed at a later date than is likely to occur on a new spike, the top of the spike may be pinched off. This action will force the spike to initiate a secondary. As is the case with older spikes that have been cut, the pinched spike will initiate a new one in 2 to 3 weeks and will produce blooms off the secondary spike in 85/95 days on the average.

Although this interval is an average times for the first blooms to open when cropping, temperature control is the key to exact timing. When spikes are either cut or pinched and warm night temperatures over 70°F and day temperatures of 85/90°F are maintained, the initiation of secondary spikes will be delayed. Under these conditions it will take 95/120 days for the secondary spike to develop and produce the first bloom.

Cool temperatures, however, will accelerate the initiation of secondary spikes from a cut or pinch. Night temperatures of 60/62°F and day temperatures of 70-80°F will cause the secondary spike to initiate faster and produce the first blooms in 85/95 days.

Of course, along with the correct temperatures, a light intensity of 900/1,200



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foot-candles is desirable; good air movement is a must; and a well-balanced feeding and watering program must be maintained. — E. Carlson.

(California Bay Area US) Coconut incense, Mozart and Bach arias, Vivaldi oboe concertos. (. . . and I thought I was weird. ed.) — W. Cecil

(Mid-Atlantic Coast US) We drop the minimum night temperature from 70° to 60°F during September to early October. — L. Clouser.

(Northeastern US) Under artificial lighting . . . Lower temperature at night below 60°F for about 4 weeks. — I. Cohen.

(Indian Coast South Africa) We have not worried about flower induction. We used to allow a chilling period, but have not been very impressed with this — C. & I. Coll.

(Southern California US) None. — W. Cousineau and others.

(South England) Normally no special steps are needed in England. Plants spike the year round. The problem on mature plants is often to maintain a balance between growth and excessive spiking — R. Dadd

(South Australia) I delay heating at the onset of the cooler nights for 3 weeks in the autumn (March). Flower spikes will show in April and plants will bloom in July through September, according to light factors. — M. Dennis.

(Mid-Atlantic Coast US) I let the plants chill slightly in late September without the use of greenhouse heat at night. This will induce spiking in early types. Not all the white Phalaenopsis hybrids will respond to this culture. — R. Drejka.

(California Coast US) I talk to the phals; they love it. Also, I have a radio on with soft Music. — W. Eckberg.

(Florida Gulf Coast US) Lower night temperature to 55-60°F; shorten day length to 10 hours or less. — J. Eich.

(Holland) From mid-May and for 6 weeks, we keep night temperature at 18°C (64°F). This will not hurt the plants or flowers which are still on the plants.

Plants will flower in August through October. The second spikes come in February and March. — a major commercial grower.

(California Coast US) We were able to control flowering season of Phalaenopsis by cutting the heat at night down to 50°F for around 5 weeks in July and restoring it to 60-62°F minimum by day. This, coupled with raising the phosphate and potassium levels in the fertilizer and lowering the nitrogen will cause the flowering to begin around the middle of November, slowly at first for Thanksgiving (about November 25), and the balance flowering heavily through December and all the way through to Easter.

As any Phalaenopsis grower knows, a new flowering spike can be produced by cutting off the old spike (when through flowering) above the second plump node. I found that on an average a new spike would appear from one of the nodes in 3 to 4 weeks. It would grow rapidly and the first bud would appear in about 30 days and the first flower about 40 days after that. The balance of the flowers would open one at a time about every 4 days. The new spike would carry only about three quarters as many flowers as the original one. We would cut off the old spike around the end of March at which time most or all of the original crop would be through flowering. The new crop gave us loads of flowers from early June through heavy August and September wedding season as well as for the June weddings.

However, let me give you a few words of caution: we were located in Malibu (California) only one mile from the ocean with a moderate climate throughout the year. We were favoured by cool ocean breezes, so that we experienced no extremes of temperature. I suggest that those growing in greatly different areas experiment with a few plants in order to adapt to your own climatic conditions. This can be done with heaters or coolers

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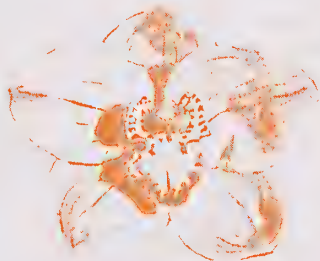
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at different times of the year. — H. Freed.

(Atlantic Coast US) Dropping greenhouse temperature in the fall plus cutting the original stem back early enough to induce another spike for later flowering. Keiki paste will also induce flowering. — K. Griffith.

(Southeastern US) I like to get the temperature down to the low 50's as early in the fall as possible for 10 to 14 days. Also, I switch to 10-30-20 fertiliser when spikes begin to appear. — J. Grimes.

(Northeastern US) None. I get enough temperature drop naturally in the summertime. — D. Grove.

(Southern California US) 55° for 3 weeks. — E. Hetherington.

(Midlands of England) BY lowering minimum temperature to the 55/60°F range for around 2 weeks. — P. Hirst.

(Florida Caribbean US) Temperatures are dropped by leaving the cool-pad system on longer starting September first. This gives us a heavy crop for Christmas. — W. Kelly.

(Southern California US) Heaters are shut off for a month in the fall, but the effectiveness of this practice is questionable, because of the variance of weather conditions. Nature controls blooming more than heating or cooling systems. — T. Koike.

(Indonesia) By using Vitabloom instead of Gandasill. — A. Kopopaking.

(Holland) Temperature and daylength both influence flowering time. Main flowering time is May-June with flower induction during the low temperatures of March with shortened days. Second flowering time is November with flower induction August-September, again, with shortened days. — H. Kronenberg.

(France) A drop in temperature to under 13°C (55°F) each night during 3 weeks. — Marcel LeCoufle.

(North of England) I never need to induce flowering. My problem, if it is one, is flower prevention (emphasis mine. ed.) — P. Lindsay.

(Central California US) A drop in night temperature to 50/55°F (10/12°C) for several weeks works rather well. Day temperatures should be 78 to 85°F (24/26°C) to be effective in setting spikes. Two waterings with straight Epsom salts (6 pounds per 100 gallons) followed by a clear water flushing. Resume normal feeding program after this. — B. Livingston.

(Florida Caribbean US) Reducing the night temperature and fertilising with Bloom Booster (10-30-20). Low temps are not encountered until late fall or early winter here in Miami. Fans are used all night to help in dropping the temperature. — L. Lodyga.

(Luzon Philippines) Our technique is low night temperatures which we get under natural environment at high elevation (800 metres) above sea level. Another technique we employ is to kick mature plants to flower at high elevation and finish them up at lower elevation. — D. Mendoza.

(South California US) I give them lots of tender, loving care and let them bloom when they want to. — H. Moyer.

(California Coast US) In November, I change to a low nitrogen fertiliser, quarter to half strength. I don't drop the temperature as this seems to promote rot and the temperature drops naturally in my greenhouse in December, anyway. I like to bloom phals late in the season, i.e. March through May. — M. & J. Nedderman.

(Indian Coast South Africa) We installed a cool room to alter temps to induce earlier spiking, but did not find it a great success. Outside plants spiked just as well at the same period without any artificial influence. It was a costly and inconclusive programme. — G. Paris.

(Southeastern US) Stop fertilising. — S. Pridgen.

(Northcentral US) Under artificial lighting . . . I drastically reduce light and lower temperatures. — A. Roberts.

(Florida Gulf Coast US) Cool nights and warm days. — J. & R. Roberts.





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(California Coast US) I remove shade cloth from October through April, for more light; I also change fertilisers to a 15-30-20 mix. — F. Robinson.

(Queensland Coast Australia) Leave it to nature. — R. Robinson.

(Puerto Rico US) During the October through December, we use 10-30-20 Peters Special fertiliser — R. Rodriguez.

(Mid-Atlantic Coast US) I have tried several controlled experiments of day length and temperature combinations using a variety of genetic ancestry. Contrary to other reports, I was not able to get any consistent or predictable results. I presume that if one uses a narrow lineage, then some sort of predictable results may be possible. — E. Rutkowski.

(Southcentral US) Switch to 10-30-20 fertiliser in the fall and I allow a natural cool period of 10 days below 60°F. — P. Scholz.

(South of England) None. My nighttime temperature dips to 55°F occasionally and this possibly induces flowering. Certainly mature plants bloom two or three times a year and I always have a lot of flowers with peak blooming from December through April. — P. Seaton.

(North of England) I leave well enough alone and keep my fingers crossed each year. Not much need, though. Everything flowers. — D. Shuker.

(Pacific Northwest US) Under artificial lighting . . . Reduce daylength. — S. Skoien.

(Mid-Atlantic Coast US) Under artificial lighting . . . We cool the basement of our house off by ventilation. This means having to wait for cool nights as nature sees fit. Attempts to use ice-cooled water on their roots did not result in any observable success. However, I have shown that the phal's roots should be wet or damp during the night cooling period. One season I carefully watered only the roots of 50 phals in 6 to 10" pots each evening for 2 weeks during the cool-down period. After an additional week, 49 of them had initiated flower spikes. — K. & M. Smeltz.

(Mid-Atlantic Coast US) We usually keep our cooling system operating at night in late summer (August) when the weather is unseasonably cool. This frequently results in early spiking. — C. Williamson.

## How far in advance of the desired date of blooming do you take the special steps?

(Central California US) I do not intentionally regulate induction. Rather, I 'dose' only plants which have not begun to spike after others have already established spikes as expected on time. I consistently have 95 per cent plus spikes well in advance of our society's annual

spring show in March each year. — R. Buchter.

(California Coast US) If all factors I mentioned above are in place and on time, the plants should start initiating their spikes 15 to 30 days after the cooling-off period and the first flowers should start opening 90 to 100 days thereafter. — E. Carlson.

(Northeastern US) Under artificial lighting . . . My plants bloom when they feel like it. I've tried putting them outside in April or May to get them to bloom in the fall for our show, but it doesn't work very well. — I. Cohen.

(South of England) If plants are required for a show date, I drop the temperature at night to 50°F for 3 weeks . . . four to four and one half months earlier. — R. Dadd.

(Florida Gulf Coast US) For us, 3 months starting in mid-September. — J. Eich.

(Holland) For flowering in November/December, the cooling period of 18°C at night and daytime temperature of 21°C for 6 weeks should be finished by July. The second spike will come on this way for Mother's Day in the following year. — a major commercial grower.

(Florida Atlantic Coast US) Three to four months. — C. & L. Hagan.

(Southeastern US) We give a 3-month lead time, but weather plays a major part



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in spike development. Our crop can vary as much as a month early or late, depending on weather conditions. — T. Harper.

(Southern California US) Three months in advance of desired flowering. — E. Hetherington.

(Midlands of England) Three calendar months. — P. Hirst.

(Florida Caribbean US) 115 days. — W. Kelly.

(Holland) The time between flower induction and flowering is about 90 days. — H. Kronenberg.

(France) At least 4 months in advance before the season we desire. Impossible to manage in the hot months of the summer season in normal greenhouses on account of too hot nights. — Marcel LeCoufle.

(Central California US) I chill nights and use Epsom salts about 4 to 5 months before desire flowering. Time of year and the weather are taken into account. — B. Livingston.

(Luzon Philippines) About 3 to 4 months ahead of natural flowering in common growing areas. — D. Mendoza.

(California Coast US) High phosphorus fertiliser is used in December and January. — F. Robinson ●

### EDITOR'S NOTE

Readers must remember that most of the responses in the above article are

from Northern Hemisphere growers. They should convert season to the appropriate months in the Southern Hemisphere and the temperature to degrees celcius.

If other growers have done work on the conditions necessary to initiate flowering in other genera, e.g. Cattleyas, Dendrobiums, Vandaceous and Paphiopedilums, it would be appreciated if they would put pen to paper and let others know their secrets.

### SHORT TEMPERATURE CONVERSION CHART

°C	°F
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2.5	36.5
5	41
7.5	45.5
10	50
12.5	54.5
15	59
17.5	63.5
20	68
22.5	72.5
25	77
27.5	81.5
30	86
32.5	90.5
35	95
37.5	99.5
40	104

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## A RAIN FOREST IN WAGGA WAGGA?

When the Wagga Wagga Orchid Society was established in 1985 under the presidency of Vince Elmes, our thoughts did not turn to seeing orchids growing in a humid "rain forest" in the dry south-western region of Wagga Wagga. Since 1985, our society has shown a gradual change from members growing fine examples of cymbidiums to those who have established suitable growing conditions for a wider range of orchids and are prepared to fight the excessive heat and cold so prevalent in this region.

The Wagga Wagga City Council has been developing, over a number of years, an exciting and very beautiful Botanic Gardens with a zoo, outdoor entertainment centre, magnificent gardens for camelias, roses, cacti, and a Shakesperian Garden and Aboriginal walkway. An Open Air Chapel is planted with trees mentioned in the bible. For children, of all ages, there is a Model Railway which provides an exciting ride through the gardens, through curving tunnels and under a major road to the Historical Society's Museum.

An original eroded watercourse within the gardens has been transformed into a rainforest area, complete with suitable plants and boardwalk. Some native orchids were initially included in this project, but lack of light and easy access to children and vandals did not allow them to flourish.

The Wagga Wagga Orchid Society has now taken up the challenge to establish an orchid glen within this humid gully. The City Council is to fence the area and build another board walk with viewing platform. Some funding to provide orchids has been promised — however our society would welcome any dona-

tions of native orchids from those who may like to help.

Wagga Wagga Orchid Society is to host a Regional Conference of the Orchid Society of NSW during the long weekend of 1st and 2nd of October 1989. Visitors to Wagga on this occasion will be given the opportunity of seeing terrestrial orchids growing in the areas as well as attending our Fifth Annual Spring Show.

Keep this date in mind — see the Wagga Wagga rain forest, ride on the model railway, and enjoy hospitality you will never forget. Interesting lectures, and social venues for all members of your family will be provided. More details will be provided at a later date ●

John Cosier,  
Hon. Sec. WWOS.

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Thank you Colin ●

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# PAPHIOPEDILUMS — THE SUBGENUS COCHLOPETALUM — Spiralled Shell Slippers

Photo: S. Castelo  
Text: R. D. Kramer

The following article will concentrate on the subgenus *Cochlopetalum* with reference to their distribution, cultural requirements & taxonomy of each of the seven recognised species.

The section name is derived in part from the Greek word *kochlos* meaning spiralled shell, this being a feature attributed to the petals which are coiled like that of a shell. Apart from being concentrated in the Indonesian Island complex, the subgenus has the unique floral characteristic of opening their flowers in succession along the scape, so that although an overall scape will have 10-20 flowers, only 1-3 are ever open at the same time.

The seven recognised species of this group are:

- *Paphiopedilum liemianum* North Sumatra 2n = 32.
- *Paphiopedilum primulinum* North Sumatra 2n = 32
- *Paphiopedilum primulinum* forma *purpurascens* North Sumatra 2n=32
- *Paphiopedilum chamberlainianum* West Sumatra 2n = 34
- *Paphiopedilum victoria-maria* West Sumatra 2n = 30
- *Paphiopedilum moquettianum* West Java 2n = 34
- *Paphiopedilum glaucophyllum* East Java 2n = 36, 37.

Notes on the individual species:

*Paphiopedilum liemianum* Fowl 1971  
This species, although almost florally indistinguishable from *P. glaucophyllum*, has distinctly ciliate leaf margins, not only at the base, but around the entire leaf margins. The leaves are also a deeper green lacking the glaucous covering of the latter. Two main leaf ecotypes have been encountered; one with tessellated leaves exhibits distinct mottling throughout, while the other has plain green leaves, almost devoid of any mottling. However, both these produce a variation in flower form and so far I have seen about 5 different floral forms each uniquely different, however still characteristically *P. liemianum*.

These differences are mainly features of the dorsal sepal but a recent flowering by J. Topper of the USA, revealed a blue pouched form.

The plant was discovered by Liem Kie Wie of Lawang in Java on limestone cliff faces on Gunong Merapic, Sumatra, Indonesia. It has also been collected on Gunong Sinabung.

*Paphiopedilum primulinum* Wood et Taylor 1973.

While most of the *Cochlopetalum* have very similar staminodes and overall colouring, *P. primulinum* has a pure yellow/green flower setting it apart (with *P. primulinum* forma *purpurascens*) from the other members. Only *P. primulinum* however totally lacks anthocyanin (purple markings) on the underside of basal parts of the foliage. Again, large (old) specimen plants of this species flower in succession on the scape. While up to 20 flowers have been seen on jungle collected specimens, an average on cultivated plants would be around 10. Some Botanists say that both *P. primulinum* and *P. primulinum* forma *purpurascens* are merely degenerative forms of *P. liemianum*. This theory at present is to be seen as pure supposition.

Again Liem Kie Wie was instrumental in its discovery from Gunong Leuser growing with *P. primulinum* forma *purpurascens*. Both have also been reported growing near *P. tonsum* (Wood).

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*Paphiopedilum glaucophyllum.*



*Paphiopedilum primulinum forma purpurascens.*

*Paphiopedilum primulinum forma purpurascens* Wood et Taylor 1976

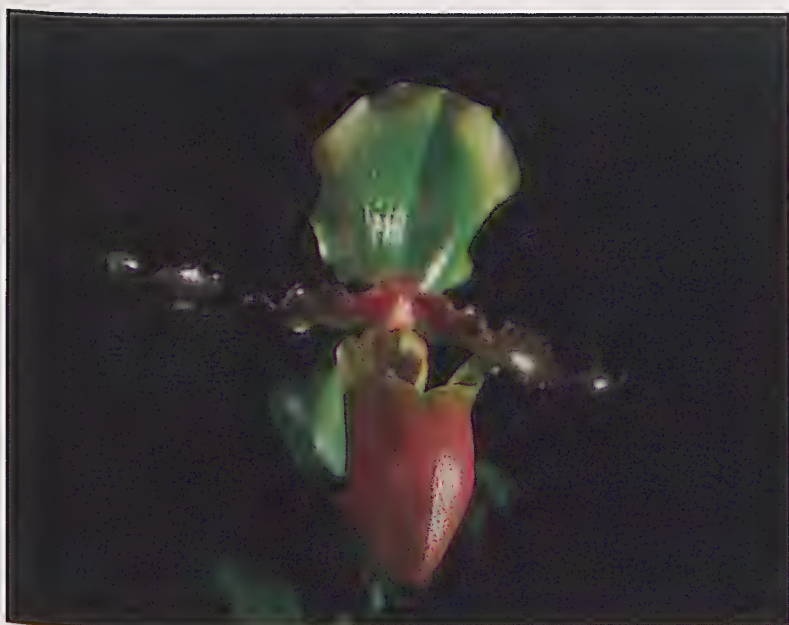
Not much more needs to be said about this species except that it differs only marginally from *P. primulinum* in having slightly more colour in the flower than *P. primulinum* and also has anthocyanin markings on the underside of the leaf and plant base. Birk has also mentioned that the chromosomal banding also appears quite different. As previously stated both forms grow amongst one another, so this has aroused some debate as to whether to accept the two as individual species or merely varieties of one another. Much work is being carried out by us through selfings and crossings

to see if both forms will eventuate from individual capsules.

*Paphiopedilum chamberlainianum* (O'Brien) Stein 1892

This plant, together with some forms of *P. liemianum* are the most robust of the group, specimens reaching enormous sizes. This led some unscrupulous dealers to advertise large collected plants as *P. chamberlainianum* variety *latifolium* and *giganteum*. The beautiful 60-90cm flowerscape bear up to 30 flowers each lasting about 48 days. This species is distinct from *P. liemianum*, lacking the ciliate foliage and the dorsal variations are slightly different.





*Papiopedilum victoria-mariae*



*Papiopedilum moquettianum*.

*Papiopedilum victoria-mariae* (Rolfe) Hook. 1896.

It would be almost impossible to confuse this species with any of the other members of the subgenus. The flowers are beautifully coloured with the pouch a very red/pink totally lacking in the darker red spotting characteristic of *P. chamberlainianum* and *P. liemianum*. While the majority of the other members of this group have white and red/brown spotting, *P. victoriae-mariae* has totally brownish petals again held horizontally. The region where the plant originates, Mt Talak Mau, North Sumatra. It grows on very wet limestone boulders and humus in deep shade. It is incredibly hard to get to,

perhaps giving the plant some limited protection from zealous collectors.

Although once very rare in cultivation, huge batches of seedling have been produced artificially and these have shown incredible vigor.

*Papiopedilum moquettianum* (J. J. (Smith) Fowl. 1905.

Controversy has raged as to whether or not *Papiopedilum moquettianum* is a distinct species or merely a variety of *P. glaucophyllum*. While some botanists have placed *P. moquettianum* as a variety, one noted and dedicated botanist, Koji Karasawa has always maintained that on an evolutionary scale *P. moquettianum* seems to be younger than

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The Clubs object is "to promote the growing of orchids, and to distribute information on their cultural habits and advancements for the benefit and enjoyment of all its members". Because of our rapidly growing membership, our two highly successful international shows at "Brimbank Park", Keilor, attendance at our workshops and judging training seminars, it is obvious there is a need for an alternative to the existing system.

Full members receive 6 bi-monthly air mailed copies of the colour magazine "The Orchid Advocate", to provide information on world wide orchid news, the 20 page bi-monthly "Leading Edge" for the local scene, meetings are held monthly - April to December - with knowledgeable speakers to inform you in local and overseas growing techniques, hybridizing, judging and much more.

In addition this year, we will run "Early Sessions" on the meeting evenings for the learner grower and the novice who wishes to upgrade their collection.

The reader will realise that this group caters for all levels of growers, so if you wish to be part of this new exciting group and get up to date on world orchid trends, this is the club for you. Membership is the same as last year -  
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SUE 'MAYTIME MAGIC' (Miniature mericlone) ..... \$45

A good white Sue with up to 30 blooms per tall erect spike. Grows and flowers well in May with up to 2 spikes per bulb. The fine red contrast labellums make this clone a real picture when in flower. Tops for pot plants.

MALUKA 'URANUS' (Intermediate mericlone) ..... \$45

A fine light brown with up to 30 blooms on tall erect spikes. A very vigorous grower. A winner in its class when first shown in 1987 at a Winter Show in July. The lip is broad and finely spotted onto a pink background which is a fine contrast to the other light brown segments of the bloom.

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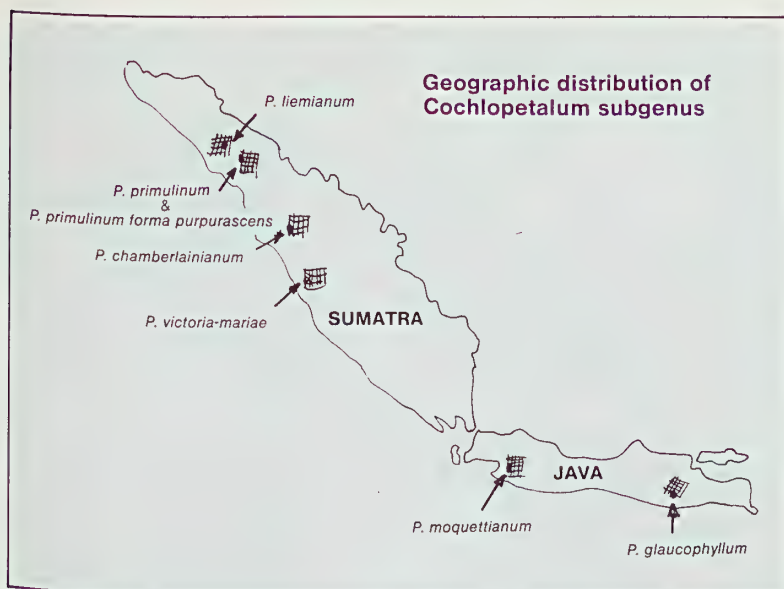
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*P. glaucophyllum* and therefore if variety status was ever contemplated *P. glaucophyllum* should have the inferior status. My personal view is that if *P. moquetianum* is considered as a variety then all other *Cochlopetalum* species should also be considered under the same nomenclatural status. On the same viewpoint, if this was the case then such species as *P. callosum*, *P. barbatum*, *P. lowii*, *P. haynaldianum* and *P. parishii*/*P. dianthum* should also be registered as varieties of one another.

The major differences between the two are firstly chromosome count, colouration (ie in the dorsal particularly), and the extremely robust nature of *P. moquetianum*. One known site of collection is Cianjur in West Java and the species is reported to be becoming very scarce in its natural habitat.

*Paphiopedilum glaucophyllum* (J. J. Smith). 1900.

As mentioned before, some clones of *P. glaucophyllum* resemble markedly clones of *P. liemianum*, almost to the point of being indistinguishable.

The leaves have a beautiful blue/ green appearance (glaucous coating) as does *P. moquetianum*. Again as with most of the members of this group *P. glaucophyllum* has the characteristic 'inflated' pink pouch speckled in deep red. The species occurs in East Java near Turen.

#### Invalid 'species'

On several occasions plants have been recorded from the wild which are later found to be natural or man-made hybrids. Argument and confusion at times rages over the validity of such intruders, the owners vehemently arguing that the plants were wild collected so naturally must be a species. Wrong!

This argument has raged over several species such as *P. tonsum* x *P. curtisii* (at

times listed as *P. superbiens*) and one classic example is found within the subgenus *Cochlopetalum*. *P. yapianum* was for years advertised by a large American nursery as a distinct species retailing for an exorbitant US\$500. I feel sorry for those who spent their money on this plant.

*Paphiopedilum yapianum* was later to be discredited and listed as fraudulent. Later research proved the hybrid (man-made) between *P. glaucophyllum* x *P. praestans*. The other name which later sprang up for the same cross was *P. Jogiae* named because of its locality in Central Java, Djogjakarta. *P. praestans* occurred in the then (Dutch New Guinea). Plants had been raised in local gardens by the Dutch residents and after they left the region, plants seeded and grew 'wild' until refund by collectors who naturally assumed them to be a new species. Because of the hybrid origin of this cross, flowers of clones exhibit innumerable variations.

#### Culture of the *Cochlopetalum* Subgenus

The joys of orchid growing are not complete unless optimum culture can be achieved. All orchid growers strive for that perfect potting mix and the breath-taking display that a well flowered plant can deliver. It is on this question that controversy has raged since orchids became domesticated, and no two growers seem ever to be able to agree.

For this reason the following outline is given only if readers appreciate that under our conditions the following guides are at their optimum. Because of our commitment to *Paphiopedilum* and *Phragmipedium* research and conservation, our need to expand was inevitable as the production was ever increasing.

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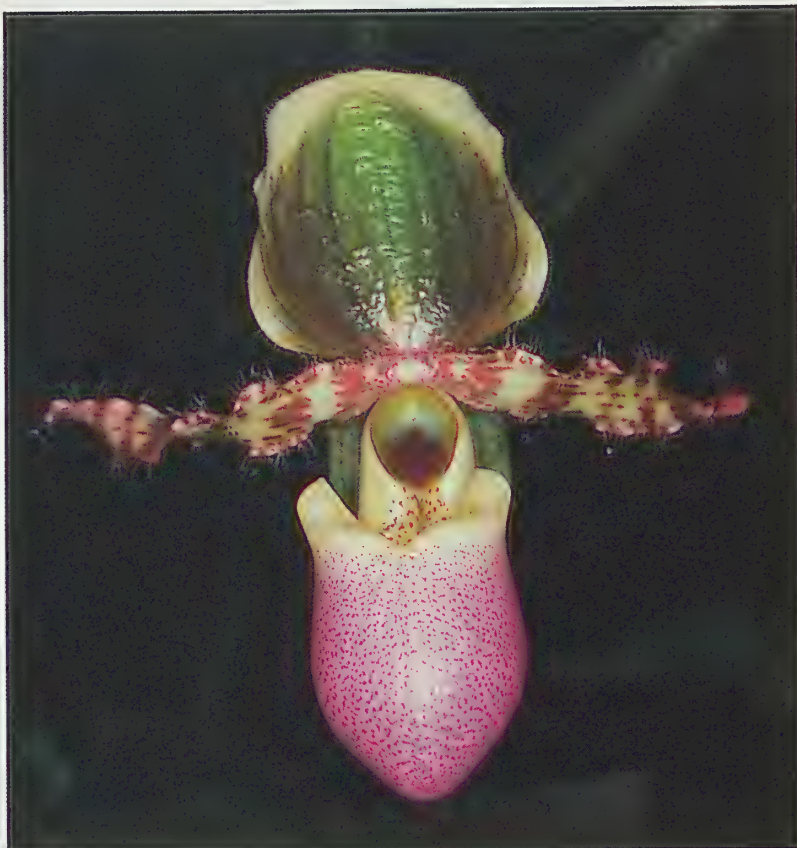
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*Paphiopedilum chamberlainianum.*

The problem that initially faced us was the frequency of re-potting which was not only very labour intensive but also can be quite costly. The problem of having to repot seedlings every 8-10 months became too much, especially when one also has to flask. For this reason live *sphagnum* moss was tested and now after a well researched programme, results are better than we could have expected.

Initially the venture was undertaken with some trepidation. Although results for all the subgenera have been excellent, the *cochlopetalum* find the *sphagnum* very much to their liking. *Sphagnum* has a natural PH of 5.5-5.7, the range under which slippers thrive. The frequency of watering is reduced compared with the bark based composts and if fertilised with inorganic fertilisers (as under our conditions) the *sphagnum* grows after some 6-8 weeks, carpeting the tops of the pots.

Note! If using *sphagnum* as a potting medium do not pack it tight as this restricts air flow with subsequent root loss. Repotting is now restricted only to when the plant outgrows the pot. One

problem that does eventuate is if you have poor water (ie salt content more than 300ppm). Water impurities plus fertiliser additions must be below the nominated figure.

We do still use our other mix for some of the species as they are better flowered with dryer condition in the winter. The bark based compost consists of 2 parts *sphagnum*, 2 parts expanded clay, 4 parts pine bark. Temperature of our plants is held as close as possible to a maximum of 28°C in the summer and a minimum of 10°C in the winter. Shading is achieved by 80 per cent black shade-cloth with a 20 per cent marix® liner inside the glasshouse. This serves a two-fold purpose — (1) restricts unwanted light (2) insulates the glasshouse.

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Your response to the invitation by the Sub-Tropical orchid Council Queensland, Inc. to join with us in celebrating Australia's Bicentennial at Orchid Expo '88 (one of the top ten of Australia's non-Government funded projects) has been so fantastic and encouraging that we look forward, with zeal, to celebrate this great event with all orchid fanciers and growers, at our Show and Conference to be held in the Civic Cultural Centre, Caloundra City on September 8 to 12, 1988.

Anybody knowing the venue will agree how fortunate we are to be staging this event under the one roof. The two main

halls and foyer will be filled with orchids — native species and hybrids; exotic species and hybrids; all those rare and distinctive "odd-bods" — just imagine — the mind boggles.

To date over 60 displays have been booked. The centre of the main hall will feature the display by the 11 Affiliated Societies of the S.T.O.C.Q. Inc. in a "walk-through garden setting".

No one should miss the opportunity to see the beauty of our native orchids at the special slide programme (which will be free and open to the public) in the lecture theatre at designated times, presented by expert photographer, Mr Bill Alcorn.

There will be flower stalls to tempt you; souvenirs; plant sales; you may even be lucky with the raffles. We could go on and on.

The number of Registrants, to date, is so very encouraging, with large contingents from New Zealand, as well as representations from the USA, Asia, and all states of Australia.

The Social activities planned for the Conference include evenings of special interest to our visitors, and the opportunity to see some of the area's beautiful tourist locations. All venues for the functions are unique — The "Sunshine Plantation" for the Gala Banquet and Prize Presentation; the "Mary Cairncross" Park — Bar-B-Que, with views of the fascinating Glasshouse Mountains, and the Myster Night Farewell Function — also a special time to make friends.

Lectures will be provided by outstanding personalities — Mr Syd Wray of Whangarei, N.Z. — "Oncidium Intergenerics" — Has been growing orchids for approximately 27 years and has diversified more widely into the Oncidium Intergenerics over the last 8 years.

Mr Jack W. Woltmon of Wahiawa, Hawaii — "Hybridizing Miniature Orchids" — First grew orchids 31 years ago; hybridized his first orchid in 1980 and to date has registered some 75 crosses.

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Mr Don Gallagher of Highbury South Australia — "Cymbidiums" — This lecture will be of great interest to all Cymbidium growers and lovers. Don will show slides of the latest awarded blooms and plants which will be well received.

Mr Norito Hasegawa of Anaheim, Cal — is an ever-popular speaker at any

Mr John Miller of Anaheim, Cal. — "Setting the Stage for Tomorrow's Phalaenopsis" — who regards his return to Australia more as a home coming than a visit. Always very interesting to listen to.

Mr Len Lawler of Atherton, North Queensland — "Native Orchids of Tropical Queensland" — Who better qualified to present a paper on Native Orchids than Len who is currently engaged in a 5 Year Project to survey the Orchids of North Queensland.

Dr Noel Grundon of Toowoomba, Queensland — "Orchids and Fungi — some good some bad" — is a Senior Research Officer with the Department of Agriculture, University of Queensland, St Lucia. Noel's "talks" are always well received, and this one promises to be a very interesting topic.

orchid conference, and we feel sure all Paphiopedilum lovers will be looking forward to his lecture sessions.

There will also be a special forum for Phalaenopsis growers hosted in the lecture theatre by Mr Bob Gordon. Growers will be given the opportunity to discuss their problems. A great chance to hear some cultural hints from a specialist. Bob will also be releasing his new book on Advanced Phal. Culture Techniques — "Phalaenopsis Culture: A Worldwide Survey" at the Conference, and will be guest speaker at the Gala Banquet on Saturday Night, September 10, 1988.

Registrants should note that the registration and hospitality desk at the Civic Cultural Centre, Caloundra City, will be open — Tuesday September 6 8am-10pm; Wednesday September 7, 8am-10pm; Thursday September 8, 8am-10pm; Friday September 9, 8am-9pm; Saturday September 10, 8am-5pm.

Conference satchels, tickets, etc can be collected from there.

If you would like to attend Orchid Expo '88 or would like to make further enquiries, please write to: Mrs D. M. Mitchell, MS 956, Flaxton. Via Nambour, 4560. Aust. Phone (071) 45 7344.

We would love to welcome you to Orchid Expo '88, so don't say "I'm sorry I missed it"!! Register Now ●



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- 0941 Onc. (Persian market x Golden Sunset 'Taka') Multicoloured red x white with red spots.
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- 1736 Onc. (Mirra x Nonamyre) x (Nonamyre x Coreen) Cool growing good Varicosum type of good shape.
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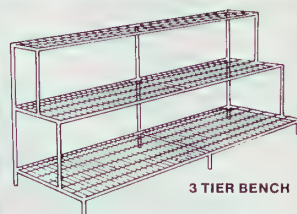


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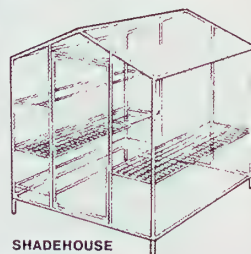
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# ELEVENTH AUSTRALIAN ORCHID CONFERENCE SYDNEY 18th to 25th September 1988

## FESTIVAL ON THE VILLAGE GREEN

*Some Festival! Some Village! Some Green!*

The Eleventh Australian Orchid Conference Show just grew and grew until it promised to be so large that there was no suitable venue for it, even in Australia's largest city.

A very satisfactory solution was found. The show will be held in a large marquee to be erected in the Sydney Domain — part of the magnificent Royal Botanic Gardens. The show will be held in conjunction with Sydney's annual "Spring in the Gardens" festival, complete with bands, banners, stalls, and all the atmosphere of the fair.

The setting is ideal. The timing is right. The Royal Botanic Gardens, located on beautiful Sydney Harbour, will be at their springtime best. The widest possible range of orchids will be on display.

An extensive variety of native and exotic orchids is grown in the temperate climate of the area and the many local orchid societies have, for 40 years or so, taken great pride in their displays. This show will feature displays from country and interstate societies as well as from overseas. The competition at this very special show will be intense.

The conference will feature Australian Native Orchids, and this will be reflected in the conference show. Great strides have been made by hybridists of Australian Native Orchids during recent years and the results of this will be well in evidence.

Whilst two full days of the conference will be devoted to original papers covering a wide range of orchid topics, the opening speakers, on Wednesday morning, will deal with Australian Native Orchids. These speakers and their topics will be Mark Clements: "Australian Native Orchids over 200 years"; Mr Les Nesbitt: "Australian Terrestrial Orchids" and Mr David Banks: "Recent Developments in Hybridisation of Australian Native Orchids". Speaking of speakers, so to speak, Dr Phillip Cribb, from Kew, has recently completed classifying the paphiopedilum species and we shall learn quite a lot from his paper: "Paphiopedilum species — an Overview". Dr Cribb has also agreed to be the after-dinner speaker at the banquet

on Thursday evening. He is an entertaining and knowledgeable speaker

The other speakers are also well qualified in their various fields. These include: Dr Julian Coker: "Viruses"; Mr Alan Merriman: "Biological Control in a Commercial Cymbidium Nursery"; Mrs Karen Tickner: "Hybridising between Sections of the Genus Dendrobium"; Mr John Miller (USA): "Phalaenopsis — Contemporary Breeding"; Mr Ned Nash (USA): "American Cattleyas for Australian Tastes"; Mr Ross Maidment: "Tissue Culture"; and Mr. Andy Easton (NZ): "The Ultra Earlies. Cymbidiums that flower by May 1st".

Evenings need never be dull in cosmopolitan Sydney with its many world-class restaurants, theatres and other places of entertainment. Just to get the party going, however, registrants will have an opportunity to get together at the Cocktail Party on Monday evening. Don't miss the organised social evening on Tuesday and the grand banquet on Thursday evening.

There is just so much to be seen around the Sydney area that the conference organisers have put together a number of tours, chosen for variety and interest. Apart from seeing the sights, tours provide an unsurpassed vehicle for socialising and cementing friendships.

Time is running out.

The Eleventh Australian Orchid Conference is only a few months away.

★ It is the big one.

★ It is the official Australian Conference endorsed by The Australian Orchid Council and the Australian Bicentennial Authority.

★ It is Australia's Bicentennial Orchid Festival.

★ It will all happen in Sydney from September 18th to 25th, 1988.

The conference has already attracted many registrants — local, overseas and interstate. These are assured of a conference which they will remember. Why not join them? The conference secretary, Alan Alvis, can be reached at 5 Knocklayde Street, Ashfield, 2131, Australia. You can telephone him on (02) 797 7329. Alan will be pleased to provide full details ●

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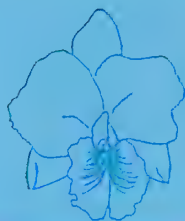
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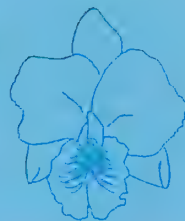
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- Phal. Sarah Loeb x Phal. Romance 'Sweet Lisa' — pink
- Dtps. Odoriko x Phal. Gentle Thoughts — white/red lip
- Phal. Joseph Hampton 'Dianne' x P. (Joseph Hampton x Muriel Turner) — white
- Phal. Musashino x P. (Hamaoka x Mariposang Puti) — white
- Phal. Fun Time x P. Orlades White Rock — white

### PAPHIOPEDILUM SEEDLING FLASKS 5-6 pl. \$15 ea.

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- Paph. Grand Canyon x Amberwave) Winston Churchill 'Indomitable'
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- Den. ruppianum x self
- Den. kingianum 'Dolly' x falcorostrum
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- C. Summer Stars 'May' x C. Queen Sirikit 'Diamond Crown'
- Slc. Hazel Boyd 'Redstone' x Blc. Orange Nugget 'Kadooka'
- Blc. Living Gold 'Summer Orange' x Slc. Orlades Early Harvest
- Blc. Yellow Ball 'Sunshine' x Pot. Faye Janetta 'Firebronze'
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- C. J. A. Carbone x Lc. Chit Chat — spring blooms
- C. Christina Waglay x Blc. Waikiki Gold 'Electrum'
- Blc. (Acapana x Spanish Banks) x Blc. Lorraine Malworth 'Miami'

**Phalaenopsis Seedlings 30 plants — \$35 ea. 6 flasks delivered \$180**

- Phal. Miki Saito 'White Blossom' x Dtps. Lady Jewel 'White King'
- Phal. Texas Thunder x P. (Mount Kaala x Joseph Hampton) — white
- Phal. Dawn Hunter x P. Gladys Read 'Snow Queen' — white
- Phal. Winter Kaala x P. (Hamaoka x Mariposang Puti) — white
- Dtps. Odoriko #102 x Phal. Gentle Thoughts — white/red lip
- Phal. California Glow x P. Romance 'Sweet Lisa' — pink
- Phal. Lippeglut 'Pink Formal' x P. Romance 'Sweet Lisa' — pink
- Phal. Dawn Hunter x P. Blanca Grande — white

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# LETTERS TO THE EDITOR

## 1987 ORCHID AWARDS

Dear Sir,

Seeing your endeavour to get a separate booklet of all the awarded plants of the growers failed because of lack of interest, why not have these plants published as a centrefold in the A.O.R. with a small additional fee for that issue?

(Name and address supplied, but withheld by request).

*The Awards transparencies are the property of the Council and we cannot reproduce them without their permission. You will be aware that we have provided two perpetual trophies on condition that the major awards appear on the A.O.R. front cover.*

Paul Kelly,  
Publisher.

Dear Orchid Review Subscriber,

Unfortunately the President of the Australian Orchid Council, Mr Don Gallagher, declined my offer to publish the awards "free" in the A.O.R. — Autumn issue.

We were prepared to absorb the additional colour separation costs to ensure valuable material was made available to our readers and orchid judges.

Dear Sir,

I am currently working on a biography of the celebrated Australian orchidologist, the Reverend H.M.R. Rupp (1872-1956).

Mr Rupp had a wide circle of botanical acquaintances with whom he maintained a vigorous correspondence. These letters are now of considerable historical

and botanical significance and, of course, are quite crucial sources of biographical information.

If any reader has, or knows of, some Rupp letters, or perhaps has personal anecdotes or other information relating to this interesting man, I would be pleased indeed to hear from him or her. If in addition, such a person would be prepared to agree to the copying, or even the outright donation of letters to the Rupp Papers in the Sydney Royal Botanic Gardens Library, then this too, would be welcome news.

Clearly much has already been lost — for instance, no trace has been found of the enormous correspondence between Rupp and such correspondents as Dr R. S. Rogers of Adelaide, Dr Hugo Flecker of Cairns or Mrs Edith Coleman of Melbourne. But who knows what may turn up?

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CLASS 222 DEN. HALO X D. GOLDEN HALO 'LLOYD'	BLUE RIBBON
CLASS 221 DEN. LILY YANG X D. TOMIE 'LLOYD'	BLUE RIBBON
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## 14TH WORLD ORCHID CONFERENCE

The 14th World Orchid Conference will take place in Glasgow, Scotland, from April 26th — May 3rd 1993. The decision to go to Glasgow was taken earlier this year at the 12th World Orchid Conference in Tokyo, in response to a bid put forward by the Scottish Orchid Society in association with the City of Glasgow, the botanical gardens in Scotland and other Scottish public and semi-public organisations.

Work has already begun. A Scottish Organising Committee has been formed, representative of the interests behind the bid, with Keith Fraser, Director of Parks and Recreation for the City of Glasgow, as its chairman. The venue for the Conference will be the Scottish Conference and Exhibition Centre. The Centre, which is a newly constructed state-of-the-art facility, is on the banks of the Clyde near the centre of Glasgow directly opposite the site of the 1988 International Garden Festival.

A 300 room hotel, incorporating extensive conference facilities, is currently being built immediately adjacent to the Centre. The Conference and the Show will therefore both be accommodated on the one site. Communications to the Centre are excellent. The national motor-way system, giving access to all parts of the country, has an access point 400 metres away, and Glasgow international airport is only 15 minutes away by road. There are, of course, numerous other hotels within easy reach.

The Scottish bid had the full support of orchid interests in the United Kingdom as a whole — the Royal Horticultural Society, the British Orchid Growers' Association and the British Orchid Council. The Scottish Organising Committee will accordingly have the backing of a Steering Committee, constituted by the RHS, whose chairman is myself, as chairman of the RHS Orchid Committee, with Keith Fraser and Ray Bilton, of McBean's Orchids, as vice-chairmen. Phillip Cribb, Curator of the Orchid herbarium at the Royal Botanic Garden, Kew, will be the coordinator of the lecture programme for the Conference.

The World Orchid Conference has not been back to Europe since the very successful 8th WOC held in Frankfurt in 1975. Intervening Conferences have set some high standards. We are confident that we can meet them. Auckland next time — but then we hope to see you in Scotland in 1993 ●

*Alasdair Morrison*

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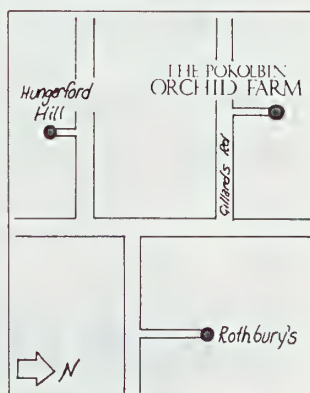
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# VALE

## Bill Paddock

The orchid world of Australia has lost a great worker, enthusiast and personality who passed away suddenly and peacefully on January 1, 1988.

Bill (Frederick William) enjoyed working with friends over a period of years, always seeking to promote orchids in every possible way. Bill's commercial life was involved with farm machinery of the well known firm of Gippsland & Northern Co-op Ltd in which he was Chief Accountant and Manager until his retirement a few years ago.

He joined the Victorian Orchid Club about 1948 and during the following following years, until 1961, was Honorary Treasurer, Honorary Secretary and Committeeman, when he was elected President till 1964. For his service here he was granted Life Membership of the V.O.C.

On the formation of the Australian Orchid Council Bill served with distinction as Hon. Sec. 1964-69 and as Vice President 1972 to 1975 when he was elected President and was granted an Honorary Fellowship of the Council for his outstanding personal service to the Council. Sadly he filled the office of President for only one year.

Bill was involved from the very beginning with the formation of the Australian Orchid Foundation until its incorporation in 1976. He then served as Hon. Secretary and Treasurer as well as a Director of the Foundation, making many practical contributions that have proved successful in the workings of the Foundation.

During his lifetime with orchids, Bill was granted a number of awards, but the one he prized most was a Life Grower's Certificate of the Victorian School for Deaf Children for services rendered.

In trips to World Orchid Conferences Bill was a staunch supporter and a worthy representative of Australia.

Bill Paddock was a quiet, just and honourable man, a wise counsellor and trusty friend. We of the orchid world in Australia mourn his passing.

We offer to his widow Shiela our sincere condolences and assure her the work of Frederick William Paddock will be remembered with heartfelt gratitude.

Gerald McCraith

Bill Smoothey

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# Orchid Societies

At A.O.R. we are often asked for addresses and telephone numbers of orchid societies. To help orchid enthusiasts locate societies in their area we have decided to publish lists of societies. Unfortunately due to a lack of space and we could only publish Queensland and Victorian societies. Other states will be published in subsequent issues.

## Queensland

The Queensland OS Inc. Sec: Mrs Noela Parsons. 11 Mundalla St. Algester 4115. Phone 273 1127. 2nd Mon.

Atherton Tableland OS. Sec: M. Dunlea. 15 Magnolia St. Atherton. 1st Thurs.

Ayr & District OS. Sec: Mrs A. E. Tait. 33A Chippendale St. Ayr. Phone (077) 83 3586. 2nd Tues.

Caboolture OS. Sec: Mrs Mary Sharp. 5 Portland St. Morayfield 4506. Phone (071) 95 3317. 1st Wed.

Darling Downs OS Inc. Sec: Mrs Sue Stone. 12 Amos Cres. Toowoomba 4350. Phone (076) 32 6513. 3rd Wed.

Eastern District OS Inc. Sec: N. Marshall. 18 Gladlyr St Capacaba. Phone (07) 390 3289. 4th Thurs.

Emerald Orchid & Foliage Society. Sec: Mrs

Karen Christian. P.O. Box 703 Emerald, 4720. Phone (079) 82 1027. 2nd Thurs.

Gympie & District OS Inc. Sec: Mrs Conny Visini. 8 Barton Rd. Gympie. Phone (071) 82 1574. Last Tues.

Hervey Bay OS Inc. Sec: Mr Athol Bennett. 7 Southerden St. Torquay 4657. Phone (071) 25 1407. First Mon (except Jan).

Ipswich OS Inc. Sec: C. D. Murray. 35 Pine St. Flinders View 4305. Phone 288 8041. 1st Wed (except Jan).

Mackay & District OS. Sec: Mrs Beryl Gilotti. 3 Currawong St. Slade Point 4741. (079) 55 1308. 3rd Thurs (except Dec).

Maroochydore OS Inc. Sec: Mrs Margaret Heyer. 3 Kent Ct. Buderim 4556. Phone (071) 45 2396. 1st Tues & 3rd Wed.

Maryborough District OS. Sec: Mr V. R. Brigg. 374 Ann Street, Maryborough 4650. Phone (071) 22 2236. 2nd Tues (except Jan).

North Brisbane OS Inc. Sec: Mrs M. Lysaght. 8 Pullford St West Chermide. Phone 359 9453. 4th Thurs & 2nd Tues (day group).

North Coast OS Nambour Inc. Sec: Mrs Lyle Paroz. P.O. Box 23 Palmwoods. Phone (071) 45 9348. 4th Mon.

North Queensland OS, Cairns. Sec: Mr L. Gliddon. 329 Draper St. Cairns 4870. Phone 51 5385. 2nd Mon.

Orchid Species Society Inc. Sec: Mr Allan Robinson. 10 Talegalla St. Wynnum West. 4178. Phone 396 3192. 3rd Mon.

Redcliffe District OS Inc. Sec: Mrs Lyn Grubb. 34 Warren Cres. Sea City Acres Deception Bay 4508. Phone 888 3796. 2nd Wed & (day meeting) 1st Thurs.

Rockhampton OS. Sec: Mr Jeff Bloxson. 12 Harden St. Nth Rockhampton. Phone (079) 28 6582. 4th Tues.

Sub Tropical Orchid Council, Qld Inc. Sec: Mrs Helen Page. Peachester, via Beerwah 4519. Phone (071) 94 9557.

Sunshine Coast OS. Sec: Mrs G. I. Andersen. Box 279 Post Office Caloundra 4551. Phone (071) 92 2379. 3rd Fri (except Dec).

The Brisbane OS Inc. Sec: Mrs Pat Crittenden. 75 Faff Ave. Hollan Park 4121. Phone 397 3418. 4th Tues.

The West Brisbane OS Inc. Mrs R. Ozzanne. 105 Bowman Pde. Bardon 4065. Phone 366 1240. 4th Wed (except Dec).

Townsville District Orchid & Allied Plants Assoc. Sec: Mr W. F. Summers. 38 Croft St. Heatley 4814. Phone (077) 79 2178. 3rd Tues (except Dec).

Townsville OS. Sec: Mrs Jean Nicholson. 10 Coe Court Heatley Townsville 4814. Phone (077) 79 7683. 4th Fri (except Dec).

Toowoomba OS. Sec: Frank Simpson. 46 Wentworth St. Toowoomba 4350. Phone (076) 35 1948. 4th Fri (except Dec).

West Moreton Orchid Group. Sec: Mrs Rita Walton. 249 Ripley Rd. Flinders View, Ipswich 4305. 4th Fri.

## Victoria

Victoria Orchid Club. Sec: Mrs I. Hutchins. 37 Elliot St. Mordialloc. 3195. Phone 580 4917. 3rd Mon.

Geelong Orchid & Indoor Plant Club Inc. Sec: R. A. Laidlaw. 32 Upper Skene St. Newtown 3220. Phone (052) 9 7653. 1st Thurs.

Gippsland Orchid Club Inc. Sec: H. Jacobs. P.O. Box 110, Stratford, 3862. Phone (051) 45 6371. 3rd Mon.

Hamilton Orchid Club. Sec: B. Simmonds. 78 King Street Hamilton 3300. Phone (055) 72 2639. 4th Wed.

Maroondah OS. Sec: Mrs Emily Spilbergs. 36 Orrong Rd, Elsternwick, 3185. Phone 528 1664. 3rd Fri.

Melbourne Eastern OS Inc. Sec: Robert K. McHutchison. 1 Highfield Rd. Gladstone 3148. Phone 277 1995. Last Mon (except Dec).

Midlands OS Inc. Sec: Muriel Christmas. Lot 19 Maldon Rd, Welshmans Reef 3462. Phone (054) 76 2376. 1st Tues.

Mornington Peninsular OS Inc. Sec: Mrs Audrey Anderson. 23 Gatcum Court, Noble Park 3174. Phone (03) 546 4917. 4th Fri.

Ringwood OS Inc. Sec: Mrs L. Duffield. 28 Dudley St, Mitcham 3132. (03) 874 7830. 1st Tues.

Sunraysia Orchid Club. Sec: Mrs Jay Ashworth. 1/172 Olive Grove, Mildura 3500. Phone (050) 23 3339. All club mail to P.O. Box 1818 Mildura, Vic 3500. 2nd Tues.

Warrigal OS. Sec: Mrs M. Murray. 60 McArthur Rd, East Ivanhoe 3079. Phone 49 3408. 3rd Wed.



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## VIRUS BREAKTHROUGH?

When scientists first started trying to fathom the secrets of interferon — the human body's natural virus-fighting substance, they had high hopes of developing new weapons against viruses and cancer. They never thought that they might come up with an agricultural chemical worth hundreds of millions of dollars to farmers.

Yet, that is precisely the turn interferon research has suddenly taken. Recently, a team of American, Israeli and West German scientists reported that an interferon-related chemical they've developed, is a potent inhibitor of plant viruses. If field experiments confirm laboratory experience, the chemical could be to plant-virus diseases what penicillin is to human bacterial diseases. Minute amounts of the chemical sprayed on a plant can stop a devastating virus infection in less than an hour. The chemical probably can be made fairly cheaply in large volume. More importantly it is harmless to the plant, and to humans and other animals.

A penicillin against plant viruses has been an elusive goal of scientists for years. About 400 known plant viruses cause billions of dollars in damage to the world's commercial crops each year.

This article is taken from Tan Bark. The Toowoomba Orchid Society Newsletter, September 1987 and was compiled by Mr B. Steven.

### A.O.R. WELCOMES EDITORIAL CONTRIBUTIONS

Address editorial to: The Editor Australian Orchid Review, 14 McGill Street, Lewisham, NSW 2049 Australia. Please make sure that all slides are marked with the owner's name and a return address is supplied.

## ADVERTISERS SPRING ISSUE

The deadline for advertising copy is July 13. Please get your copy in early!



# SOCIETY NEWS

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## MARYBOROUGH DISTRICT ORCHID SOCIETY BICENTENNIAL SHOW

The Maryborough District Orchid Society Bicentennial show has been endorsed by the Qld Bicentennial Authority, and is listed on the official programme of celebrations. The show will be staged from the 5th-8th August in St Paul's Memorial Hall, Adelaide Street Maryborough, Queensland, concurrent with the Australian travelling exhibition in the Maryborough show-grounds.

The schedule includes 50 classes and handsome trophies will be awarded. Visiting societies and Maryborough groups will be mounting displays. Activities will include floral arrangement and orchid corsage making, plant sales and orchid culture information. It is expected some period costumes will be worn.

The Maryborough District Orchid Society is renowned for its hospitality and visitors will be welcomed with a first class display. We are making our show a gay and festive occasion. Please visit us!

## THE CHARTERS TOWERS ORCHID AND ALLIED PLANT SOCIETY

Orchid growing in Charters Towers dates back to pre-war days. To grow orchid genera in a climate considered semi-arid, with an average rainfall of 4500mm and a humidity level not compatible to the high levels orchids like. The temperature hovers around 40°C during the summer, our winters are much cooler than the coastal belt, so some of the colder growing orchids will flower here at 330 metres above sea level and a latitude of 20.05s; a lot of the world's orchids match these conditions.

With modern materials to create the right light conditions and with modern fertilisers, pest and disease control methods and sprays, a high standard can be reached.



## PRESENTATIONS

The beginning of 1988 has seen many presentations to long standing members of O.S. NSW Ltd and the A.O.F.

Mr Les Peaty and Mr Ron Kerr were presented with specially mounted Society Gold Medals for long service on the committee. Mr Peaty retiring as Registrar of Judges and Registrar General of AOC.

Mr Kerr retired as the editor of the Australian Orchid Review, a position he held for 24 years.

Mr Doug Symons was granted life membership of the society for his valued work over many years.

Mr Frank Slattery presented Australian Orchid Foundation Awards of Honour to Mr Herman Slade at the March O.S. NSW Ltd meeting.

Mr Bill Murdoch, pictured, was presented with his award in Newcastle earlier in the year.



### **Cym. Longuien 'Fine-N-Glowing' (Standard)**

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Our water is obtained from the Burdekin River, and even though treated seems to agree with the plants.

Shade cloth up to 80% with combinations of degrees of light on the walls of the compass points are used by the growers to their own needs. Fans are used during the hottest part of summer to cool and circulate the air. In winter a cover to keep the cold wind out is usually all that is needed by some fussy growers, and more water is applied than most of the nursery books tell us. More humidity is most necessary, and is created by watering the floor area twice a day in Summer.

Some members of our Society like a challenge and will go to a lot of trouble to

flower plants that only the most southerly states can flower, but with little success.

Our Society has had a moderate success at the Townsville Orchid Societies' bi-annual shows.

In recent times the Club has built up in numbers and is attracting a number of younger members. There is a strong revival of Orchid's and associated Genera in North Queensland and with modern tissue culture, the north's climate, nearness to overseas nurseries, the north must become a centre for growing orchids more naturally and with the need for artificial means greatly reduced.

Our society can see the need for a North

Queensland Orchid Show in the near future as the quantity and quality of Orchids are fast growing and a central venue can only up-lift the orchid grower and enhance the Orchid Industry.

*Albert Coffison*  
Secretary/Treasurer

## INTERNATIONAL ODONTOGLOSSUM ALLIANCE IN AUSTRALIA?

The International Odont. Alliance Meeting was held on March 12 and 13 in conjunction with the B.O.A.G. Show at the R.H.S. Old Hall in London. Growers from around the world gathered to view a wonderful array of flowers. Australia was represented by Mr and Mrs G. McCraith, Clive Halls and Philip Altmann. The wonderful variety of colour and patterns offered in the Odont. Alliance was truly to the forefront of the Show. The Eric Young Foundation had a large display of exceptional quality and other top displays were placed by McBeans, Keith Andrews and Mansell and Hatcher. A series of excellent lectures were presented by the Odont. Alliance featuring American, German and English speakers. There was a general consensus amongst growers that interest and enthusiasm for Odonts. is growing rapidly, and in view of this, it has been proposed to see if there is sufficient interest here to begin an Australian Branch of the International Odont. Alliance.

Anyone interested can contact either Clive Halls, R.S.D. 92 Three Bridges Vic 3797. Phone (059) 66 7253 or Philip Altmann, 32 Riverview Terrace Warnambool Vic 3280. Phone (055) 62 3753.

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## ORCHID SPECIES SOCIETY OF VICTORIA

This society meets on the second Monday of the month at Nunawading Horticultural Centre, 82 Jolimont Road, Forest Hill at 8 pm. The secretary, Miss Jacinta Burke has a new address: PO Box 303, East Bentleigh, Victoria 3165. The society produces a very useful bulletin.



## CYMBIDIUM SEEDLING OF THE YEAR

The Cymbidium Club of Australia's annual Seedling of the Year competition attracted 31 entries. The largest number of entries ever received.

The competition is conducted in two sections:

1. For flowers benched up to and including the month of July.
2. For flowers benched up to and including August to October.

Judging is by a panel of judges registered with the Orchid Society of New South Wales. Four judges comprised the panel. Selecting Sara Jean 'Mandi' x Sylvania 'Shell pink' a miniature orchid as the "Orchid of the Year" after a prolonged review of the flowers which had been selected as the winners of the monthly selection.

Details of the winning plant are — Exhibitor and Hybridiser, Mr F. E. Smith; lip colours: spotted red; number of flowers: 15; dorsal: slightly hooded; width overall: 57mm; width of ventral sepal: 21mm; width of labellum: 22mm; width of petal: 20mm; date exhibited: 6.8.87.

The judges felt that the quality of the flowers submitted for this years competition were not as good as in previous years.

The members choice, selected at the November meeting was a standard flower, benched by Harold Baxter — Wallara 'Gold Nugget' x Lunagrad 'Elanora', Benched on September 3, 1987.

## 13TH WORLD ORCHID CONFERENCE 1990

As this long awaited conference will be held in Auckland, New Zealand, in September 1990 we are now planning for a party from NSW to visit the conference and possibly take the opportunity to enjoy the hospitality and beauty of the country.

The numbers will probably be limited to 35 and the duration of the tour will be approximately three weeks.

Your "Tours Committee" (Darcy Bloomfield, Ian Chalmers and Bill Smoothey) would like you to let them know if there are any areas you would especially like to visit. You'll be under no obligation but it would be of assistance to us if you would let us know your constructive ideas for such a tour.

*Bill Smoothey*  
Phone (02) 46 2567



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# SHOW DATES SHOW DATES

## NEW SOUTH WALES

Albury-Wodonga and District Orchid Club Inc. WINTER. Daffodil, Camellia & Orchid Show. Continuing Education Centre Centre, High St Wodonga. 27/8. 12 noon to 4pm. SPRING. Albury High School Stadium, Kiewa St, Albury. 8/10 & 9/10. 8/10 1pm-9pm, 9/10 10am-4pm.

Alstonville OS Inc. SPRING. Uniting Church Hall, Fri 2/9 & Sat 3/9. 9am-4pm.

Bankstown OS. WINTER. Bankstown Shopping Square. 18/7 to 23/7. Shopping Hours. SPRING. Same Venue. 5/9 to 10/9. Shopping Hours.

Berowra & District OS Inc. SPRING. Community Centre, Gully Rd, Berowra. 10/9 & 11/9. Sat 11am-9pm, Sun 9am-3.30pm.

Boolaroo OS. SPRING. Stockland Centre, Jesmond. 15/9 to 17/9. 15/9 9am-9pm, 16/9 9am-5.30pm, 17/9 8.30am-2pm.

Campbeltown & District OS. WINTER. Campbelltown Mall. 21/7 to 23/7. Shopping Hours. SPRING. Macarthur Square. 22/9 to 24/9. Shopping Hours.

City of Lismore OS Inc. SPRING. Lismore City Hall, Ballina St, Lismore. 8/9 to 11/9. Thurs 9am-7.15pm, Fri & Sat 9am-6pm, Sun 9am-3.30pm.

Cumberland Orchid Circle. WINTER. Castle Towers Shopping Centre, Castle Hill. Thurs 30/6 to Sat 2/7. Shopping Hours. SPRING. Same Venue. Wed 31/8 to Sat 3/9. Shopping Hours.

Eastwood & District Orchid Circle Inc. SPRING. Macquarie Centre, North Ryde. Mon 5/9 to Sat 10/9. Shopping Hours.

Five Dock RSL OS. WINTER. Top Ryde Shopping Square, Blaxland Rd, Ryde. Mon 15/8 to Sat 20/8. Shopping Hours. SPRING. Marketown Shopping Centre, Flood & Marion Sts, Leichhardt. Mon 12/2 to Sat 17/9. Shopping Hours.

Gosford & District OS. WINTER. Marketown, Henry Parry Drive, Gosford. 29/6 to 2/7. 9am-6pm. Shopping Hours. SPRING. Same Venue. 7/9 to 10/9. 9am-6pm. Shopping Hours.

Goulburn Valley Orchid Club. SPRING. Civic Centre, Shepparton. Sat 1/10 & Sun 2/10. 10am-5pm.

Grafton District OS Inc. SPRING. Grafton Shopping World. 22/9 to 24/9. Shopping Hours.

Great Lakes OS Inc. WINTER. Great Lakes Expo, Kularoo Drive, Forster. 11/6 to 13/6. 12.30pm-5pm 11/6, 9am-5pm 12/6 & 13/6. SPRING. Library Building, Forster Primary School, Middle St, Forster. 1/10 to 3/10. 9am-5pm.

Hawkesbury District OS. WINTER. 11/6 & 12/6. Richmond Senior Citizens Centre. SPRING. Same Venue. 3/9 & 4/9.

Illawarra District OS Inc. WINTER. Warrawong Shopping Centre 7/7 to 9/7. Shopping Hours. SPRING. Shellharbour Square 25/8 to 27/8. Shopping Hours.

Ku-Ring-Gai OS. SPRING. Westfield Shopping Town, Hornsby Wed 31/8 to 3/9. Shopping Hours.

Morisset & Lakes Districts OS Inc. WINTER. Wyong Plaza 26/7 to 30/7. Shopping Hours. SPRING. Charlestown Shopping Square. 23/8 to Sat 27/8. Shopping Hours.

Orchid Society of Canberra. SPRING. Phillip College Phillip ACT. 10/9 & 11/9.

Sapphire Coast Orchid Club — Bega. WINTER. Merimbula-Imlay Bowling Club. 26/8 & 27/8. 10am-4pm. SPRING. Norm Henry Motors, Carp St, Bega. 30/9 & 1/10. 9am-5pm. 9am-5pm.

Shoalhaven OS. WINTER. Presbyterian Church Hall, Kinghorn St, Nowra. Fri 9/7. 9am-5pm. SPRING. Same Venue. Fri 16/9 12.30-8pm & Sat 17/9 9.30am-5pm.

Southern Districts Combined OS. SPRING. Westfield Shoppingtown, Hurstville. 1/8 to 6/8.

Sydney OS. SPRING. Strathfield Plaza. 29/8 to 3/9. Shopping hours.

Southern Riviera OS. SPRING. Ulladulla Civic Centre. 1/10 & 2/10. Sat 1/10 9am-7pm. Sun 2/10 9am-4pm.

The Sutherland OS. WINTER. Gympie Bowling & Recreation Club, Kingsway, Gympie. 2/7 & 3/7. Sat 10am-5pm, Sun 9am-4.30pm. SPRING. Same Venue. 3/9 & 4/9. Sat 10.30am-6pm, Sun 9am-4.30pm.

Tweed District OS Inc. SPRING. Sunnyside Shopping Centre, Murwillumbah. Early October. Shopping Hours. Dates TBA.

Wagga Wagga OS. SPRING. Sturt Public School 10/9 & 11/9. 10am-5pm.

Wollongong Bicentennial Combined Orchid Show. SPRING. Crown Central Shopping Centre. 8/9 & 10/9. Shopping Hours.



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# SHOW DATES SHOW DATES

## QUEENSLAND

The Queensland OS Inc. SPRING. Riverside Ballroom, 42 Oxlade Drive New Farm. 20/8 to 21/8. 91m-5pm.

Aspley OS Inc. SPRING. Community Hall, Edinburgh Castle Rd, Wavell Heights, 17/9 & 18/9. 9-5 Sat & 9-4 Sun.

Ayr & District OS. SPRING. Water Festival Display. Coutts Mall. Thurs 29/9 & Fri 30/9. Thurs 8.30am to 9pm. Fri 8.30 to 5pm.

Caboolture OS Inc. WINTER. Civic Hall Caboolture. 14/7 to 16/7. Thurs 9-8.30, Fri 9-5, Sat 9-2.

Emerald Orchid & Foliage Society. SPRING. Village Shopping Centre, Emerald. September. 7am to close of centre.

Ipswich OS Inc. SPRING. Combined Orchid & Horticultural Spring Show. TAFE College, Bundamba. 15/9 to 17/10. Hours TBA.

Maryborough District OS. SPRING. Saint Pauls Memorial Hall, Adelaide St, Maryborough. 5/8 to 8/8. 9am-9pm.

Orchid Species Society Inc. SPRING. Mt Coot-tha Botanic Gardens Auditorium, Toowong, Brisbane. 17/9 & 18/9. Sat 9am-5pm, Sun 9am-4pm. Open Show. Displays by other Societies.

Rockhampton OS. SPRING. McCamley Meat Hall — Rockhampton Show Grounds. 17/9 to 25/9. Fri 12 noon to 9pm, Sat 9am-9pm, Sun 9am-3pm.

Sub-Tropical Orchid Council, Qld, Inc. SPRING. Orchid Expo '88. Civic Cultural Centre,

Caloundra, Qld. 8/9 to 12/9. Fri & Sat 9am-9pm. Sun 9am-6pm. Mon 9am-5pm.

The Gold Coast OS. SPRING. Show Grounds, Queens St, Southport. 2/9 to 4/9. 9am-5pm.

Toowoomba OS. SPRING. Myer Rooftop. 17/9 to 24/9. 17/9 9am-8.30pm. 18/9 10am-5pm. Weekdays 9am-8.30pm. 24/9 9am-12 noon.

## VICTORIA

The Victorian Orchid Club. WINTER. Keysborough Shopping Centre, Cheltenham Rd, Keysborough. 1 week from 18/7. Shopping Hours. SPRING. St Johns Church Hall, Orrong Rd, Toorak 30/9 to 2/10. 10am-7pm Fri & Sat and 12.30pm-5pm Sun. SPRING FESTIVAL Week, Keysborough Shopping Centre, 1 week from 17/10. Shopping Hours.

Gippsland Orchid Club Inc. WINTER. Sale Technical School, Sale. 27/8 & 28/8. 10am-5pm. SPRING. Killdare College, Traralgon. 1/10 & 2/10. 10am-5pm.

Maroondah OS. SPRING. Nunawading Arts Centre, Whitehorse Rd, Nunawading. 1/10 & 2/10. Sat 10am-10pm, Sun 10am-5pm.

Warrigal OS. SPRING. Heidelberg Technical School Hall. 8/10 & 9/10. Sat 10am-8pm. Sun 10am-5pm.

Mornington Peninsula OS Inc. WINTER. Cranbourne Shopping Centre, 13/8 to 20/8. SPRING. Karingal High School, Ashleigh Ave, Frankston. 8/10 9am-6pm & 9/10 10am-5pm.

## TASMANIA

Devonport OS Inc. SPRING. Spreyton Hall, Spreyton. 23/9 to 25/9 10am-6pm.

Scottsdale OS. SPRING. Mechanic's Hall. 21/9 to 24/98. 1pm-5pm & 9am-5pm.

## SOUTH AUSTRALIA

South Coast Orchid Club of S.A. Inc. WINTER. Marion Community Recreation Centre. 29/7 to 31/7. 10am-5pm. SPRING. Colonnades Shopping Centre, Nourlunga. 19/9 to 24/9. 9am-5.30pm.

Port Augusta Orchid Club Inc. WINTER. Cooinda Hall Flinders Tce, Pt Augusta. 29/7 & 30/7. SPRING. Same Venue. 15/9 to 17/9.

Riverland OS. SPRING. Loxton, SA. 10/9 & 11/9. 10am-4pm.

## WESTERN AUSTRALIA

Orchid Society of WA. WINTER. 20/7 to 23/7. 9am-5.30pm Wed & Fri; 9am-9pm Thurs; 9am-12.30pm Sat. Venue TBA. SPRING. Centre Point Shopping Centre, Midland. 14/9 to 17/9. As per Winter Show Times.

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Valley Orchids new 1988 catalogue is essential reading for anyone who is interested in Cymbidiums. Send for your free copy.

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# Australian Orchid Review



**SPECIAL BICENTENNIAL ISSUE FEATURING  
AUSTRALIAN NATIVES**

SPRING 1988



# Botany Bay Orchids

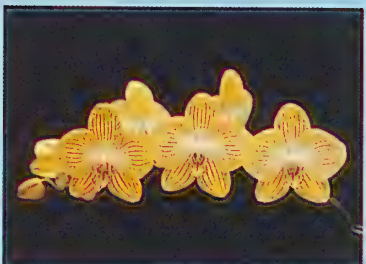
FLASKS READY FOR JUNE, 1988



Phal. Orchid World 'Bonnie Vasquez'  
AM/AOS - Silver/JOGA - Gold/12th WOC



Phal. Zuma Winter White  
'Maria Vasquez'



Phal. Bonnie Vasquez  
'Zuma Valley' FCC/AOS



Phal. Zuma Red Eye  
'Bonnie Vasquez' AM/AOS



Phal. Carmela's Gem  
'Zuma Canyon'

## WHITE

- 8618 Margo 'Zuma Canyon' X Buena Flora 'Suzanne' AM/AOS
- 86541 Dtps. Orglade's Puff 'Samuel Loeb' X (Malibu Carnival X Kauai Monarch) #1
- 86582 (Dtps. Double Trouble X Dtps. Orglade's Blonde Belle) X Aubrac 'Q603'
- \* 86626 Florida Snow 'Frank's Choice' X Spitzberg 'Krull-Smith'
- \* 86628 Florida Snow 'Frank's Choice' X (Donna Rigg X Jimmy Hall)
- \* 86634 Florida Snow 'Frank's Choice' X Chamonix 'Ponkan's Big White'

## WHITE/RED LIP

- 86576 Quintana Roo Dunne 'Alice' X (Dtps. Alice Loeb X Phal. Zuma Firefly) 'Poco Loco'
- 86585 Dtps. Festivity 'B' X Glad Melinda 'Poco Loco' (miniature)
- \* 86625 Bright Lights 'Vegas' X Line Renaud 'B-32'
- \* 86632 (Malibu Felicity X Malibu Lipstick) X Donna Sitton AM/AOS

## PINK

- 86536 Melinda Nan 'Capitola' X Scaramouche 'Galaxie' AM/RHS (Pastel pinks, spots)
- 86538 Spring Silk 'Tropical Pink' X Tungku Afzan '2nd Best' AM/AOS (Medium pink, red lip)
- 86539 Herbert Hager 'Sal Loeb' X Tungku Afzan '2nd Best' AM/AOS
- 86543 Spring Silk 'Tropical Pink' X Rosy Flora 'Poco Loco'
- 86558 Zuma Champion 'Home National' X Joline 'Lisa'
- 86562 Enchantress 'Rusk' X Lippegruss 'Rusk'
- 86600 Abendrot 'Krull-Smith' X Abendrot 'Fantastic' AM/AOS
- \* 86615 LIPPEGRUSS (Lippstadt 'Rosy' X Abendrot 'Fantastic' AM/AOS)
- \* 86622 In the Pink 'Sunnybrook' X Joyau 'Suzanne'
- \* 86629 Zauberrose 'Drull-Smith' X Line Renaud 'Krull-Smith' (Pink, red lip)

## STRIPED

- 8624 Zuma Happiness 'Zuma Canyon' AM/AOS X Dtps. Orglade's Party Magic 'Zuma Canyon'
- 8642 Chickasaw 'Zuma Canyon' X (Proud America X Eva Kruze) 'Zuma Canyon'
- 86546 Zuma Chorus 'Zuma Valley' HCC/AOS X Tungku Afzan 'Poco Perfection'

## YELLOW - GREEN

- 8603 *venosa* 'Zuma Creek' X Mary Vance 'Zuma Canyon'
- 8605 Heart Beat 'Zumita' X *venosa* 'Zuma Canyon'
- 8606 Zuma Winter White 'Zuma Valley' X George Vasquez 'Green Meadow' AM/AOS
- 8649 Goldiana 'Zuma Canyon' AM/AOS X Pretty Cute 'Zuma Canyon'
- 8658 Goldiana 'Zuma' HCC/AOS X Abendrot 'Zuma Royal' (yellow-gold)
- 86529 Miami Sunrise 'Lemon Drop' X Pinwheel 'Poco Loco' HCC/AOS (yellow Stripe)
- 86553 *stuartiana* 'Sal's Choice' X Miami Sunrise 'Sunny Skies' (yellow novelty)
- \* 86633 Florida Snow 'Frank's Choice' X Hausermann's Gold Cup 'Everlasting' (yellow-green)

## SPOTTED

- 8631 Samba 'Zuma Canyon' X (Scherzo X Joline) 'Zuma Bonita'
- 8651 Carnival 'Bonsall' AM/AOS X Summa 'Zuma Canyon' HCC/AOS
- 86531 Charisma 'Pinkie' X Glad Melinda 'Poco Loco' (miniature)
- 86532 Cassandra 'Santa Cruz' X *stuartiana* 'Sal's Choice' (miniature)
- \* 86588 Dtps. Alice Loeb 'Alice' X Phal. Scaramouche 'Galaxie' AM/RHS
- \* 86609 Elise de Valec #4 X Coquinette 'Krull-Smith'
- \* 86614 Cassandra 'Woody' X Capeline 'Krull-Smith' (miniature)
- \* 86624 Be Glad X Elise de Valec 'The King' (miniature)

## NOVELTY

- 86530 *stuartiana* 'Larkin Valley' AM/AOS X schillerana 'Poco Loco' (spots)
- 86540 Zuma Chorus 'Zuma Valley' HCC/AOS X Scaramouche 'Galaxie' AM/RHS (miniature - spots, stripes)

ALL PLANTS ARE FROM ZUMA CANYON ORCHIDS CALIFORNIA U.S.A.

The above listing is for seedlings taken from Flasks 6 months ago & all are in good growing condition with new roots established.

Price for each Plant is \$4.50 except plants marked with asterisk being \$5.50 each plus freight.

Write for our 1988 Colour Catalogue containing our latest  
Flask & Mother Flask Listings.

# Botany Bay Orchids



## WHERE PARENTAGE COUNTS

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The fine seedling opposite was bred from Winter Wonder 'Josephine' and Gardalvin 'Pastel'. Both are showing themselves to be extremely fine parents.

Beautiful results are coming from our early tetraploid crosses as you will know if you have them.

Forward notice is given for those looking for a new standard in pink to familiarise themselves with our breeding parents Sylvester Star 'Pink Mist' and Sylvan Star Pink Veil: Crosses will be offered in our November mailing list.



Cym. (WINTER WONDER X GARDALVIN) 'Debbie'  
First Flowering June 1988

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## NEXT ISSUE

The next issue will feature articles on growing Sophronitis hybrids, humidity, fertilizing your orchids and general features.

## Cover Story

The type specimen of *Dendrobium speciosum* was collected from the Port Jackson area in the early 1800s probably by Surveyor-General White and described by Sir James Edward Smith in 1804.

The variety pictured is *D. speciosum* var. *grandiflorum* 'Mt Larcom Gold'.

# Australian Orchid Review

Volume 53 — No. 3

NATIONAL HERBARIUM OF VICTORIA SPRING 1988

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(photo D. Banks)

## *Diuris punctata* 'Snowwhite'

David Banks

HCC/AOC — HCC/NSW

*Diuris punctata* is commonly known as the purple Donkey Orchid. It is an extremely variable terrestrial species throughout its extensive south-east Australia range. It is distributed from south east South Australia through Victoria and along the east coast of New South Wales to the Atherton Tableland in North Queensland. *Diuris punctata* is usually encountered in heathland or open woodland in fairly fine graded soil which becomes rock hard during its summer dormancy.

Albinos are fairly scarce in our native orchids and are always highly sought after due to their obvious rarity. Whilst the much publicised *D. punctata* var. *abla-violacea* is nearing extinction in southern Victoria, it is being cultivated in private collections and botanic gardens — so its continuance is assured. I know of only half a dozen clones of this rare white form. However, it is fortunate that the plants are amenable to cultivation and can be "helped to multiply" — more on this later.

I grow my *Diuris* in a mixture of 50 per

cent coarse horticultural sand, 25 per cent sieved cymbidium compost and 25 per cent bush sand. I know it doesn't sound flash — but it works. I use standard black plastic pots — 140mm pots are a good size for 2 or 3 tuberoids. Plants are grown under 30 per cent shade cloth and hung above the benches so that no "nasties" can reach them!

It is important to initially plant the tuberoid fairly deeply, this helps to maintain strong flower spikes for September/October flowering. I dry the pots out slowly after yellowing of the foliage in late November and recommence watering in mid February. Plants are kept just moist during the growing season.

Whilst plants can be raised from seed, it is somewhat "hit or miss" for amateurs. An easy way to increase the number of plants is the removal of the NEW tuberoid between August and October. By this time the old tuberoid is still plump and the new tuberoid has matured for next years growth. Repot the plant and carefully remove the tuberoid. Leave both parts of the plant in a shady spot for





*Diuris punctata* 'Snowwhite' HCC/AOC HCC/NSW (photo D. Banks)  
Photo showing new tuber (white) with old tuber from which flower spike produced.



*Diuris punctata* 'Snowwhite' HCC/AOC HCC/NSW (photo D. Banks)  
New tuber carefully removed. Note old tuber and roots.

## WAL and JILL UPTON'S

"NEW BREED" OF  
AUSTRALIAN NATIVE ORCHIDS  
AT 11TH AUSTRALIAN  
ORCHID CONFERENCE SHOW



*Dendrobium Elegant Heart* (3½")  
(D. Peewee X *D. speciosum*)

Wal and Jill are releasing new breakthroughs in native hybrids at the show in the tent in the Domain, Sydney. Flasks, seedlings, divisions, flowering plants! Highly desirable flowers, often of "tropical" size and colour but cool-growing. Select your flasks from COLOUR PHOTOS of hybrids to flower the year round.

Examples of flasks ready now:

- Dendrobium Elegant Heart* X *D. rupianum* v. *magnificum* (3¼")
  - D. Elegant Heart* X *D. Bright Spark* (3" yellow)
  - D. Peewee* (short caned large red) X *D. Aussie Dream* (Big Ellen type)
  - D. Rosella* (3" dark red) X *D. Hilda Poxon*.
  - D. Jombock* (long raceme dark pink) X *D. Red Baron* (good shaped red)
  - D. Mem. Lloyd Bradford* (Upright raceme 25 flowers) X *D. falcorostrum*
  - D. Sunglow* X *D. Karen Nair* (2 good yellows)
  - D. Pixie* (very florific) X *D. Red Baron* (good shaped red)
  - Sarcophilus Mavis* (pink) X *Pteroceras hirticar* (Yellow with red markings)
  - Sarcophilus ceciliae* X *S. australis*.
- plus at least 50 other crosses.  
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*Diuris punctata* "Snowwhite" HCC/AOC  
HCC/NSW Close up of flower. (photo D. Banks).

a couple of hours for the wound to heal. Then repot the "parent" plant into the same pot and mix and water well. Thinking that the new tuberoid has been eaten or destroyed it will produce up to four small new tuberoids. However, you should be happy with one! The new tuberoid you have taken off is also potted and watered once. Then allowed to dry right out until February.

More success is achieved if this is done in August — when the flower spikes are only small. If you do it when the plant is in flower it is important to pollinate a few flowers to keep the spike alive and green that little bit longer.

This method is also successful for other *Diuris* species and hybrids and the "Rufa" group of *Pterostylis*.

I was lucky enough for my plant to receive a Highly Commended Certificate from the Orchid Society of New South Wales in October 1987. Both spikes held 10 pure white and apple green flowers.

Not only is it very rare, it is also very beautiful. The Virgin Queen of our New South Wales terrestrial orchids. I hope its seven dwarfs grow just as well! ●

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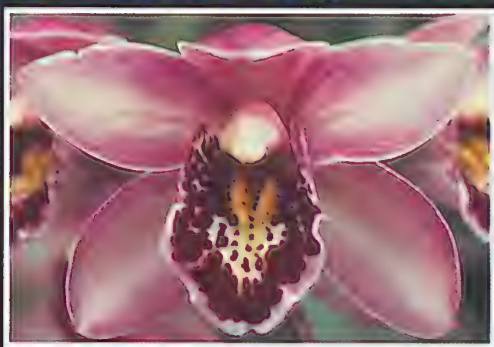
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# NEW HORIZONS FROM SCHAEFERS ORCHIDS



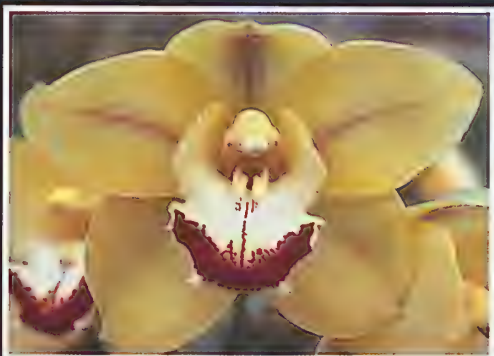
Charles Toovey 'Princess Lauren'  
16 Flowers — July



Everglades 'Pink Tower'  
15 Flowers April



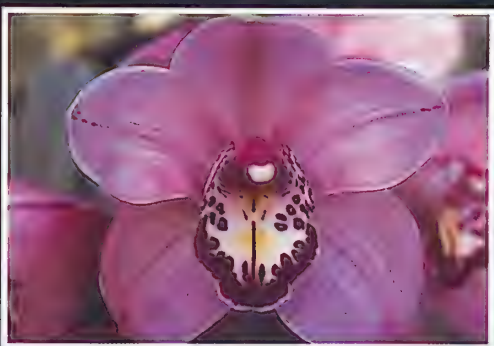
Yowie Flame x Sleeping Dream 'Natalie'  
12 Flowers — July



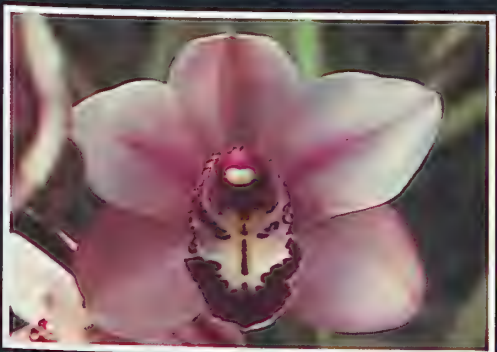
Coraki x Trigo Royale 'Judy'  
12 Flowers — May/June



Winter Wonder x Angelica 'Butterball'  
12 Flowers — June



Via Del Playa 'Yvonne'  
12 Flowers — July



Sue x Rincon 'Pink Orb'  
12 Flowers — May



Dolly x Alegria 'Mt Everest'  
18 Flowers — June





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## CATTLEYA MERICLONES

- FC002 POT. CANYON SANDS "ANACONA" HCC/AOS  
GOOD SHAPE ORANGE RED LIP. SIZE A-\$7, B-\$10, C-\$15, D-\$20
- FC006 BLC. DORCILLE LITTLE "CALICHAN"  
GOOD SHAPE RED, LIP IS DEEPER RED. SIZE A-\$7, B-\$10, C-\$15, D-\$20
- FC020 LC. HAWAIIAN FANTASY "DORA" HCC/AOS  
PETALS & LIP SIMILARLY MARKED WITH WHITE OVERLAID WITH CREAM,  
BRIGHT PURPLE TIPS & VEINED THROAT, PARCHMENT SEPALS —  
AUTUMN. SIZE D-\$30, E-\$35.
- FC023 BLC. LUCKY STRIKE "MONGKOL TRAKUL" AM  
SHOW PURPLE, BETTER CLONE THAN "VIRAPONGSE". SIZE A-\$7, B-\$10,  
C-\$15, D-\$20.
- FC061 LC. ECTACY "ORCHIDGLADE"  
LARGE WHITE RED LIP SEMI ALBA. SIZE B-\$10, C-\$15, D-\$20

## CATTLEYA SEEDLINGS

- FC001 C. NETRASRI BEAUTY — (C. THOSPOL SPOT x C. BATTALINI)  
OLIVE GREEN SEPALS & PETALS WITH MAROON SPOTS, WHITE AROUND  
COLUMN & FULL RED SPADE LIP. SIZE C-\$10.
- FC007 SLC. GALAXY BELL  
OLIVE GREEN, BROWN SPOTS, WHITE LIP. SIZE D-\$10
- FC015 BLC. PORTS OF PARADISE x C. THOSPOL SPOT AM  
BRIGHT GREEN, BROWN SPOTS, WHITE LIP. SIZE D-\$10
- FC018 LC. LITTLE IRENE "NETRASIRI" AM/CST  
x C. THOSPOL SPOT "THIKAMPORN" AM/CST  
CLUSTER NOVELTY GREEN, YELLOW SPOTTED SEPALS. SIZE D-\$10
- FC024 \*BLC. RATTANAKOSIN "NOPORN" x BLC. SA-NGOB "NOPORN"  
EXCELLENT YELLOW, EXHIBITION SHAPE SIZE C-\$10
- FC046 BLC. ELIZABETH HEARN x (C. QUEEN SIRIKIT x GERTRUDE HAUSERMAN)  
EXPECT GOOD SHAPE WHITES, YELLOW THROAT. SIZE C-\$8

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- D. CATAWBA — (PRINCESS SHARON x TAKAMI KODAMA)  
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- RD21 D.C.K. AL "OKA"  
MUCH SOUGHT AFTER-INTERMEDIATE LARGE RED ORANGE LONG SPIKES,  
SEVERAL TIMES PER YEAR. SIZE E-\$25
- RD22 D. CAROL GOO "WINE GOLD"  
BRIGHT YELLOW SEPALS, CLARET RED PETALS & LIP OUTSTANDING  
SIZE E-\$25
- RD23 D. CHITRAPONG  
PALE GREEN WITH MAGENTA LIP, HEAVY SUBSTANCE, INTERMEDIATE  
SIZE E-\$25
- RD24 D. YONG KOK WAH  
SIZE E-\$25
- RD25 D. FIELD KING "VIROJ"  
FREE FLOWERING, OLD FAVOURITE YELLOW, SOMETIMES HARD TO GET  
SIZE E-\$25

## DENDROBIUM SEEDLINGS

- FD008 D. APRICHART RAINBOW x MADAME VIPA  
AS PER COLOUR PHOTO LEFT. SIZES C-\$8, D-\$10
- FD011 D. CEASAR 4N x MARY MAK 4N  
LARGE OPEN PURPLE, WIDE PETALS. SIZES C-\$8, D-\$10, E-\$15
- FD021 D. JAQ CONCERT x MDM. UDOMSRI  
DARK RED PETALS, LIGHTER SEPALS, INTERMEDIATE TYPE.  
FREE FLOWERING. SIZE C-\$8, D-\$10
- FD022 (D. HAWAIIAN GOLD x TOMIE) x TOMIE DRAKE  
AS PER COLOUR PHOTO LEFT. SIZE C-\$8, D-\$10
- FD027 (D. RAKPAIBOON x SOMSAC) x (PALEFACE x DOREEN)  
WHITE PHAL TYPE. SIZE C-\$8, D-\$10
- FD037 D. MADAME VIPA "WHITE" x SINGAPORE "WHITE"  
OPEN WHITE PALE GREEN SHADING. SIZES C-\$8, D-\$10

## VANDACEOUS SEEDLINGS

- FV001 ASCDA. CHOLAIKUM "RED" 4N x V. ARTCHARIVA  
PINK TO RED. SIZE C-\$8, D-\$10
- FV003 V. MEVR. L. VELTHUIS "ALBA" x V. COERULEA "UDOM"  
SEMI TERETE WHITE AND GREEN. SIZE C-\$8, D-\$10
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# AUSTRALIAN NATIVE DENDROBIUMS

## FROM FLASK TO FLOWERING

### Choosing your Flask

In choosing a flask of Australian Native Dendrobiums a number of points need to be taken into consideration. Firstly, in regard to the physical aspect of the plants in the flask, a most important factor is that the plants are still growing strongly at the time of deflasking; any plants which have stopped growing, usually because they have exhausted the nutrients in their growing media, are difficult to get going again once they have been deflasked. At best, considerable time is lost in the plants becoming established, and in the long term this could very easily result in them taking an extra season before they flower, and when all is said and done, flowering them is the name of the game.

The plants in flask, nearing deflasking, should have a good balance of leaf growth as compared to root growth. Generally speaking the roots should have just about covered the bottom of the flask. Leaf growth will vary according to the species or hybrid in the flask. Very pale green or yellowish leaf growth is usually an indication that the nutrients in the flask have been exhausted or that the flasking media is a deficient in one or other of the substances that it should contain.

Whether the flasks contain species or hybrids, the same type of questions need to be asked as to the quality and suitability of the parent stock for breeding. In the wild, nature arranges the pollination of plants so that the overwhelming majority of seedlings are siblings rather than selfings, as there are definite advantages in this type of breeding which gives a better spread of the genes within the species and avoids the possibility of breeding in and fixing the poorer qualities in the flower which is selfed. It goes without saying that only the very best of stock should be considered for breeding, and even when these super plants are available, a lot of thought and weighing-up of possibilities should be indulged in before actually making the cross. Some plants have a history of breeding behind them and we can refer to this to ascertain their various dominant and recessive features, others we may be breeding with for the first time, and here it is important to consider where each of its parents have shown dominant and recessive characteristics in the past, and from this, together with all our other information and experience, make an educated

assessment as to whether the mating is likely to produce the result we are seeking. No hybrid should be made without due consideration to a number of factors which are critical to the result in every instance. In my opinion the most important of these are:

1. Plant size . . . Preferably compact and tidy.
2. Spike habit . . . Clear of the foliage and upright or semi-arching, as distinct from drooping.
3. Floriferousness and flowering period . . . We should be aiming at an abundance of flowers over an extended period.
4. Lasting Qualities . . . Flowers of good substance and texture will naturally outlast thin and papery flowers, so good heavy substance has high priority.
5. Ease of culture . . . It is important that we try to avoid hybridising with parent

stock which is itself difficult to grow. This trait will almost assuredly be passed on to the progeny.

6. Colour . . . Should be clean and bright, any markings must be well defined — not smudgy or blurred.

7. Size and Shape . . . In our Native Dendrobiums we have an infinite variety of size and shape of flower. I feel very strongly that we should be making a conscious effort to retain them all in our breeding programmes. By all means improve the size and shape where that is possible without losing the individual character of the flower. Do not place too much emphasis on "round and flat". After all we are not breeding magnolias.

Before you purchase your flask consider all these factors, discuss them with your supplier. You will learn a little more about the plants you are purchasing and their prospects of success. Only buy flasks that you are satisfied contain

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plants with a fair chance of producing the type and colour you require. With every flask you take a chance, but by critical assessment of what you are acquiring, along the lines set out above, you must improve your chances of success.

### Deflasking

The best time to acquire flasks is in early Spring so that when they are deflasked they have a full growing season ahead of them. Before deflasking, the plants in the flask should be allowed to stand in an area of moderate light, preferably in a glasshouse or other protected area.

Some types of flasks have to be broken in order to remove the plants. It is sometimes recommended that the flask should be wrapped in newspaper and smashed, the idea being that the newspaper protects the person doing the smashing, this may be so, but it does little for the plants inside the bottle! I prefer to mark around the outside of the bottle or flask etc. with a good glass-cutter. A gentle tap on the marked line breaks it neatly in two and the plants can be lifted without harm. I prefer straight sided bottles or flasks; then all that is necessary is to take off the cap and hook out the plants, media and all, with a piece of wire, and place them on paper on the workbench for separation.

As my plants are separated I wash each one individually in a solution of two litres of tepid water to which has been added one teaspoon of Captan or other suitable fungicide and six drops of Formula 20. After washing, the plants are placed on a piece of paper towel which holds enough of the solution from the washed plants to keep them in good condition until all have been processed.

I then select the largest of the plants and plant them individually in 50mm tubes. I usually replate sufficient flasks to enable me to discard the really small plants; however if these are required they can be potted up into a community pot (about 15-20 plants to a 150mm pot). In either case they are planted in a mix of eight parts each of seedling size pine bark and similar river gravel and one part each of seedling grade charcoal and horticultural grade perlite from which the dust has been removed.

For quite a number of years I used a mix of equal parts of bark and gravel with quite good results, however since I have added the charcoal and perlite to the mix, improvement has been apparent and I shall certainly continue with the new mix. As each 20 or so plants are potted up I move them to their growing area in the shadehouse under 70 per cent shade and water them with a mixture of one heaped teaspoon of Captan or other suitable fungicide and six drops of Formula 20 to 10 litres of water. If the

weather permits (not too hot) they are then left for two or three days before normal watering. They are then treated in the same manner as all other natives in the shadehouse, that is, water as required. I water quite frequently, but this depends on each individual grower, and every grower seems to have his or her own idea on the subject.

Since this article appeared in "The Orchadian" I have changed my fertilising programme slightly in that I now feed every seven days throughout the year. On alternate weeks I use one quarter strength Aquasol and an organic fertiliser such as Fish Emulsion, Nitrosol etc., again at one quarter strength. All my plants, babies through to specimen size receive the same treatment and they appear to be thriving.

I am convinced that one of the most important factors in growing our Native Dendrobiums is the environment in which they are grown. Just as you create a specific environment in a glass-hosue in respect to light, humidity, temperature, etc., you can create optimum conditions in your shadehouse that will give you that feeling of buoyancy so often quoted by our scribes, particularly in describing glass-house conditions which they describe as feeling "right".

The basic requirements of a shadehouse are well known. I like a roof a little over two metres high, benches about half a metre above ground level, made of galvanised pipe and mesh and give full air circulation; they also tend to deter pests like slugs and snails, which appear not to like walking? — creeping? — over galvanised surfaces. The southern wall should be closed in with fibro cement or similar material to keep out the cold/wet conditions which come from that quarter. The western wall should be closed in with glass, alsynite, or other translucent material to block out the seasonal westerly winds, and at the same time to take advantage of the much needed afternoon light in autumn and winter.

Some portion, preferably the south-west corner should be roofed over with glass or alsynite to provide a protected corner for those plants which need controlled watering in winter, and as protection for those plants being groomed for shows etc. Having at least two areas of different shade value is a distinct advantage. I would suggest 50 per cent shade for the main growing/flowering area and 70 per cent shade for smaller plants just out of flask and up to near flowering size. Sarcocochilus also prefer the 70 per cent zone.

The foregoing suggestions for a shadehouse are only basic requirements. These need to be worked on, as dictated by the position of your shadehouse and every other factor such as shade from neighbouring properties etc. Try to



achieve that elusive "atmosphere" that your plants will enjoy; you know the feeling, like walking into a shaded dampish gully or creek area, the air somehow feels different, not damp and cold, but moist and just a little cooler than elsewhere.

There is just a hint of air movement; it feels good, it will feel that way to your plants too and they will respond accordingly. To achieve these conditions one of the first areas to receive your critical attention will be the floor; not just the area between the benches, but wall to wall, preferably before the benches are constructed. If the floor is hard earth and slopes even moderately, water from watering, misting, etc. Will be lost almost immediately.

If necessary form a series of flat areas and shape your benches to suit the area; they do not all have to be square and rectangles, the more you break them up the more interesting the area becomes. The more important part, or one of the important parts is what is under the benches. After levelling the floor I fill with about 300mm (6 inches) of boiler ash and wait for this to settle before constructing the benches. Now if you wish to maintain some degree of peace in the home cover the ashes with 25 to 50mm of small blue metal or gravel — this stops the black from the ashes walking up onto the new carpet, but more

importantly it allows the moisture held in the ashes to permeate through the gravel into your growing area, a good soaking of the floor will maintain conditions of good humidity for days, even in summer time.

There are other factors governing environment, but in the main they are small adjustments involving individual shadehouses and you will pick them up as you go along. The main thing is that you are now looking for ways of achieving that "perfect environment". Small changes can make big differences.

#### Culture

The actual culture of you plants is a very individual matter, growers have varied ideas about growing media, pot sizes,

feeding, etc. If your method is working for you — do not change it, at least do not change it until you have tested the proposed change on a few plants for at least a full season — then evaluate critically and honestly before you commit your whole collection to change.

For many years my collection, from babies up, grew in a mix of 50 per cent pine bark and 50 per cent gravel with very good results. Over the past couple of seasons I have experimented with a mix containing 40 per cent pine bark, 40 per cent gravel, 10 per cent charcoal and 10 per cent perlite (charcoal and perlite sieved to remove dust). I have been sufficiently impressed by the new mix

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- 1423 Sar. ceciliae 'Townsville' x ceciliae 'Roseus' A crossing of two excellent clones
- 1424 Sar. ceciliae 'Upton' x ceciliae 'Jill' Sibling cross to two fine clones.
- 1513 Den. pugioniforme x speciosum var. grandiflorum Very unusual cross looking for green flowers.
- 1732 Phaius grandiflorus x self Terrestrial orchid with large sprays of orange/brown blooms.
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over the past two seasons that I am now prepared to move my whole collection into it as I report, with one exception — for plants that I expect to remain in the same container and mix for more than three seasons I delete the charcoal, because after this period, if you are feeding with chemical fertilisers, the charcoal becomes toxic to the plants through absorption of chemical salts and results in root loss.

I prescribe wholeheartedly to Mr Alvin Bryant's article on "Magic Water". In this article Mr Bryant states that credit is given to a lot of new fertilising programmes, when in actual fact much of the credit for the improved performance is due to the more regular and efficient watering programme co-incidental to the feeding programme. In other words if your plants are contained in a suitable growing media, grown in a suitable environment, and receive sufficient water at correct intervals, they will grow surprisingly well without additional feeding.

However I feed all of my plants as mentioned previously. I feed once a week, and if possible I like to water at least twice between feedings. Sufficient water at regular intervals, so that the plants are never stressed by the need for water is of paramount importance in any feeding programme. If plants which have been fed with chemical fertilisers are allowed to dry out completely they are at risk of damage by reverse osmosis. With the right combination of environment, water and nutrition you will flower your plants at close to their full potential, but neglect any one of these facets and their potential will never be realised.

#### Pests

The pests which attack our Australian Native Dendrobiums are many and varied, however with regular and careful shadehouse and glasshouse hygiene, removal of dead leaves and tissue, weeding and generally keeping the area clean and tidy, most of the pests can be dealt with without resorting to the more toxic sprays on the market today. I regularly visit one very good collection where regular (3 to 4 times a year) sprays of a Lime Sulphur compound, readily available at any nursery, appears to afford almost complete control of pests.

Red Spider is a pest which is often not treated until the infestation is well established. There are specific sprays for red spider (miticide), or very good control can be established by biological means with predatory mites . . . Wax Scale is readily controlled by some of the less toxic insecticides in conjunction with a small percentage of White Oil . . .

Dendrobium Beetle seems to be more of

a pest in collections which are in close proximity to areas of wild growing orchids. They also thrive in neglected collections. Control is difficult, but can be established with systemic insecticides while in the larval stage. However for the eggs to reach larval stage a great deal of damage has been done, for when the eggs hatch they burrow into the new growth on which they were laid and turn the growth into a rotting, unsightly mess. Constant vigilance and good hygiene is the best control for this pest . . . Grubs and Chewing Things are relatively easy to control if you are observant and prepared to spray several times a year as a preventative measure.

"Dipel" gives almost complete control . . . Aphids are probably the worst pest of all in nuisance value. You never see them unless you have flowers almost ready for a show or club meeting. They mass on the flower spike, puncturing the flowers and buds and in many instances causing the buds to abort. They will also attack succulent new growths causing marking and pitting of the soft tissue. They have been mentioned as possible vectors of orchid virus.

Some pyrethrum based sprays can be used without damage to the open flowers, however they should not be used in the heat of the day otherwise the flowers will be severely marked and may even drop. Some of the new granular systematic insecticides which are sprinkled on the surface of the growing media and watered in, claim success, however if the aphids are already on the flower spikes it is too late for this type of treatment. It would, however seem to be an ideal form of preventative treatment for those special plants being groomed for shows etc. particularly if the treatment was commenced as soon as the flower spikes initiated. Extreme caution is urged in the use of this type of insecticide as they are very, very toxic.

#### Flowering

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enough to have missed out on, or controlled all the nasties mentioned in the preceding chapter you will have flowers in pristine condition for exhibition, provided that you have carefully tended your plants since the flower spikes first became noticeable. Make sure that none of the spikes get caught under leaves and become twisted. As the spikes begin to extend the plant should be removed to a sheltered situation to avoid dust and water damage. All watering should now be to the growing media only, and not over the whole plant. Daily inspection is necessary at this stage as aphids and their relatives can sneak in overnight.

It is possible to speed up flowering slightly by placing plants in brighter or warmer (or both) conditions. If your plant is in full flower, it will last longer in good condition if kept in darker, cooler conditions.

Anyone can grow and flower Australian Native Dendrobiums. The end result will depend entirely on the amount of time, effort and vigilance that you are prepared to expend in following this most satisfying of horticultural pursuits ●

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# ORCHIDS AFTER CYCLONE TRACEY

It all began in 1975 after Cyclone Tracy when Lloyd and Win Kent, in repairing their house and garden in suburban Darwin, thought the time was ripe to buy a dozen orchid seedlings and one flowering plant, and start a small collection.

Those few plants from Cairns hung in a tray under the back steps for months until a shadhouse of modest pretensions (6 x 3m) was ready for occupation. Joining the Orchid Society of the NT followed and the purchase of a few more plants.

This was the period when members were building up their stocks of plants again after the cyclone's destruction. The Kents had the task on behalf of the Society of buying in quantities of plants from Queensland nurseries. Often they purchased and added any unsold plants to their collection. So their numbers grew.

A visit to Singapore resulted in the purchase of some vandaceous topcuts. Some flasks of seedlings were also obtained. It was time to register a business name — Lakeside Orchids — and sell some plants to the public. The shadehouse was added to three times until all of one side of the house was taken up. Meanwhile at the back and other side expanding beds for vandaceous "ground" orchids began to take up all available space.

Quantities of these and flowering size intermediate dendrobiums and oncidiums were being brought in from Bangkok, Singapore and Cairns. It was then possible to begin selling cut flowers to Darwin florists.

Such was the situation by 1982 that orchids had just about taken over the Kent's residence. A move to a rural block was imperative. Whereas it took about half a day to shift the Kent's household effects to their tall timbered 2 hectare block at Beens Creek, some 34 km from Darwin, it took close to a month with two vehicles to relocate all their orchids to the new shadehouse and ground beds made ready. It was one of those "never again" exercises.

Today, with upwards of 30,000 plants, principally intermediate dendrobiums and vandaceous, Lakeside Orchids is one of the larger nurseries in tropical Australia, selling orchid plants locally, interstate and occasionally overseas, and supplying cut flowers to Darwin florists. However, these are still early days for the

nursery which is aiming primarily at the cut flower trade in Darwin (and ultimately interstate) as much of the stock is not yet up to flowering size.

There has been much to be learned — and more yet to be learned in this developing period — about optimum requirements for a whole range of different plants in the Top End's particular version of lowland tropical climate. Here, with a rainfall of approximately 1500mm (60 inches) concentrated mainly in the months December to March, the climate is predominantly dry. Recognising this, much of the local "philosophy" of growing orchids in the lowland tropics has been rejected, and with encouraging results.

Their experience suggests that orchids will ride through the comparatively short "wet" season without much trouble (they grow their heads off in this period). Emphasis needs to be placed rather on the longer dry season with relatively low humidity so:

(1) They have fully enclosed shade-houses, rather than open-sided, for dendrobiums, oncidiums, cattleyas, strapleaf vands etc. because they believe that in their situation, of the two important factors of sustaining humidity/moisture and providing good ventilation, the former is of greater significance and in any case, the coastal Top End is not short of sea breezes and dry south-easterlies. Further, they have moved from 50 to 70 per cent shade cloth for dendrobiums and similar, while the young stock is under 80 per cent and much of the outdoor, vandaceous is under 30 per cent.

(2) They have developed a substantial windbreak of trees (some natives) and shrubs and a line of windbreak material to keep as much of the prevailing dry south-easterlies as possible.

(3) They water once a day (in the late afternoon, to boot) unless it has rained and frequently water in the morning as well in the dry season. In their situation they believe the last thing they want to do is to let plants "dry out" between waterings. An automated water system on town supply renders this task easy. It should be mentioned that they carry out regular preventative fungicide spraying programs with Physan 20, Benlate and others.

(4) Except on the larger plants, they use a finer potting mix which would typically



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The have tried no shadecloth, strips of shadecloth alternating with open strips, all over 30 per cent shadecloth and other variations. They are now developing a number of beds under a scattering of tall trees against a strong westerly shade break of trees and shrubs to break the afternoon sun. There is evidence that a number of lines, including Arachnis, Arantheras, Arandas, and Holttumaes are appreciating a situation in which they have in the morning sunlight and shade (from the trees) alternating as the sun moves across the sky, with substantial afternoon protection. On the other hand, their young Mokara Mak Chin Ons surprised them by flowering under 70 per cent shade, giving a clue to their requirements.

All the above constitutes an ongoing learning process in which they aim to provide optimum conditions for their range of plants in our climate in their particular situation ●

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*D. speciosum* var. *pediculatum*. Herberston.

## SOME THOUGHTS ON *Dendrobium speciosum*

Ted Gregory

The very mention of the word *speciosum* is enough to start me reminiscing back to the late depression to when our rain-forests were being felled endlessly to expand the dairying and beef industry. And after this came the Second World War which sped up the process even more. In those days orchids were of little or no value and were just left to rot or be burnt by the following fires.

As most of us know by now *D. speciosum* is now divided into six varieties by the botanists for various reasons. The varieties are as follows: *D. speciosum* var. *speciosum*, *D. speciosum* var. *hillii*, *D. speciosum* var. *grandiflorum*, *D. speciosum* var. *curvicaule*, *D. speciosum* var. *capricornicum* and *D. speciosum* var. *pedunculatum*. I propose to deal with each of these individually as I go along and also to throw in some thoughts and experiences on breeding with these most beautiful orchids. As I have often said if the Americans had this orchid in their backyard it would have been number one in the world years ago. But being a nation of knockers that we are

I find that *D. speciosum* is only just starting to get the recognition and attention it deserves.

### *D. speciosum* var. *speciosum*

This superb orchid occurs from just below the Victorian border and runs fairly continually north to Alum Mountain on the central coast of NSW where there seems to be a rather definite cut off point. It's main habitat is the rocky eastern escarpments of the Great Dividing Range that skirts the coast in this part of Australia.

It is not often seen growing on trees these days; but I often suspect it would have been rather common on trees in those beautiful rainforests on the south coast of NSW that white man so quickly destroyed. One of the favourite memories of my childhood is of the fabulous musky perfume that pervaded the Hawkesbury River escarpments in the spring evenings when countless thousands of these plants were in bloom.

Var. *speciosum* is a very robust grower, with rather short heavy canes tapering

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quickly from bottom to top with normally three or four leathery leaves near the apex. The flowers of var. *speciosum* are normally a light creamy colour, with the odd clone producing deep yellows and pure whites. The average flower would be around 40mm from top to bottom with odd ones running to double that and over. This is one thing a lot of us are inclined to overlook; that is the fact that there may be a million clones of *D. speciosum* out there, but they are all seedlings and hardly any two of them are exactly the same when one gets down to close examination.

One of the strongest features of var. *speciosum* from a plant breeder's point of view is the strong, fairly upright raceme. To this one can add the fact that the flowers are usually well spaced on the raceme.

In my experience most of the breeding and hybridising that has been done with Australian orchids concerning *D. speciosum* has been done using var. *speciosum*. Whether its potential is fully exploited or not as yet in one of the questions that will plague all interested orchid growers for a lot of years yet, in my opinion.

Even though I love hybridising our Australian natives I am rather more interested in improving the species. This is a field I think all orchid growers should become involved in Mother Nature was

doing a fairly good job here till 200 years ago but from now on, the rest is up to us. I guess a lot of people would class a person as a first grade idiot to be growing *D. speciosum* seedlings that will take years to flower when you can buy a large plant off a dealer for a few dollars. But here lies one of the great difference for the future. What are the chances in nature of two top clones mating? Perhaps one in a thousand! This is where the great improvement will occur in our orchids: by selective breeding we will have much superior parents to call on: this in turn will lead to much improved hybrids — even primaries.

At the moment it is hard to say what will happen with crossing between the different varieties of *D. speciosum*: a few have been done but not many flowers have been seen as yet. One case that comes to mind is that of *D. speciosum* var. *speciosum* 'Ermine x *D. speciosum* var. *grandiflorum* which was done years ago by friend Harry Klose. "Ermine" is a large white from the Wattagans with a lot of purple on the labellum. The var. *grandiflorum* was also a good form of its tribe. The results to date have been outstanding.

### *D. speciosum* var. *hillii*

Having grown up in the foothills of Barrington Tops area this was one of the

orchids from *Karen McFarlane*

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first orchids that I was to become familiar with. The fact that they were just called rock lillies yet grew on trees did not cause me any headaches at all in those days. At one stage I had to walk nearly three miles through the bush to school and have many memories of the white cascades in the heads of many of the brushwoods along on the way in the Spring. I also have memories of the same walks in the winter; when it used to be getting quite dull before we were let out of school.

Starting in the Barrington Tops *D. Speciosum* var. *hillii* continues north to about the Brisbane area after which it gives way to var. *grandiflorum*. Var. *Hillii* is much more an orchid of the rainforest than var. *speciosum*; which in the main always showed a preference for the rocky outcrops. This applies along the coast and well into the ranges but on the inland side of the ranges there are many var. *hillii* happily growing on the rocks too.

Var. *hillii* on the average is a much taller grower than var. *speciosum*, with canes of a metre or more not uncommon in areas where the plant is growing in heavy brush. It grows into huge specimens under favourable conditions; I have seen clones that would fill the back of a small truck growing on big strangler figs and corduroy beeches.

I have often wondered if the length of

cane is more or less controlled by the plants' need to reach sunlight. As I said earlier it is not uncommon for plants growing on trees with a dense canopy to have canes a metre in length. Yet I could walk half a mile to a bare escarpment where the same var. *hillii* were growing as lithophytes; as squat and compact as any var. *speciosum* ever was.

I have all the known varieties of *D. speciosum* growing in our nursery and I am now developing a suspicion that plants grown under the same amount of light over a period of years tend to develop canes of the same length. This of course is a rather loose statement, as plants of var. *pendunculatum* will never quite get the length of *grandiflorum*; but any one who cares to look at our plants and compare the ones that have been shade house grown for years to recently collected plants can see a talking point. This point will be clarified in a few years as we are growing all the forms of *D. speciosum* from seed in our nursery.

The flowers of var. *hillii* are quite small in comparison to var. *speciosum*; but in my experience a plant of var. *hillii* grown in the same conditions will generally have more racemes per cane. Normally var. *hillii* flowers do not open very widely: in fact 25mm is quite a good flower and usually the spike is very crowded and rather drooping as well.

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*D. speciosum* var. *curvicaule*, Townsville.



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Colour is usually white changing to cream as the flowers age.

However there are some clones that open very well and also have very upright habits, in fact the best clone I have for habit comes from the inland limit of its range. I also have one clone that was given to me as a seedling from Woko in NSW that has large flowers as well spaced as a normal var. *speciosum*.

Being a longtime fan of *D. x delicatum* has perhaps given me a bit of an insight into what to expect in breeding so here goes.

In comparing natural *D. x delicatum* made with var. *speciosum* var. *hillii* I find the only great difference is in the size and shape of the cane in the hybrid. The var. *speciosum* progeny have a much stouter cane than those produced by var. *hillii*. The ones I know of from Alum Mountain have slightly larger flowers on the average but some of the var. *hillii* progeny I have, show that no rule is without exception. Another interesting point is that many of the var. *hillii* progeny have just as upright spike as the one with var. *speciosum* parentage.

One interesting sidelight to our breeding is the fact that we are discovering clones that produce hybrids that flower much more quickly. Here is one more facet where a little more brain power would come in handy. Think of all those clones that no one has bothered to use and think of the gene pool that we may never tap!

Since coming to Tamborine Mountain I have had a bit of a chance to study var. *hillii* on this end of its range, which is regarded as being close to its northern limit — which has given me a chance to compare it with the forms from my old stamping ground on the Hastings-Manning area of NSW. After all this I think I may be more confused than when I started and begin to ask myself are there such definite cut-off points between the different varieties of *D. speciosum* as some people suggest or do they gradually merge into one another as they exist up and down the length of the Great Dividing Range? The following are a couple of examples that immediately spring to mind.

I have viewed quite a few clones on the mountain here over the last couple of years and although most of them are what we would call straight var. *hillii* a few appear to me to be more or less intermediate between var. *hillii* and var. *grandiflorum*. There is one locally collected clone in a garden on the mountain here that is a fairly deep yellow with flowers larger than most var. *hillii* I have known and that are spaced out more like var. *grandiflorum*. I have also seen clones growing on the western cliffs as lithophytes of a very similar appearance. Also, on the average I find the foxtail of flowers up here greater in diameter.

I have not set foot in the bush in the Cunninghams Gap area as yet but as I





*D. speciosum* var. *capricornicum*. Yeppoon.



*D. speciosum* var. *hillii* 'Woko'. Large well spaced form.  
Gloucester N.S.W.

drive through the Gap on my way south at the right time of year up on the rocks above the highway, I can see many clones of *D. speciosum*; all of the deepest gold, and a deep colour right from the word go. They look superb through binoculars: one of these days I must hope for an hour to spare and get a closer look.

#### *D. speciosum* var. *grandiflorum*

I thought the *D. speciosums* from Alum Mountain and the Hawkesbury were the peak of perfection, but after a few years and a few friends up here I am not nearly so sure! I think any southerner would be a little moonstruck at his first sighting of a good var. *grandiflorum*; especially if it was a deep golden one.

This was the first thing that I learnt about var. *grandiflorum*; for every deep golden one there are an awful lot of deep creams and yellows. In this regard all varieties of *D. speciosum* have this in common: that is the fact that the flowers will range from downright ordinary to purely fabulous.

Var. *grandiflorum* occurs from around Nambour and at least as far north as Miriam Vale which seems to be about its northern limit. The plants are very similar to var. *hillii* in appearance except when in flower, with canes ranging from squat to well over a metre tall, depending to a great extent on the amount of light received by the plant. I have a few clones at the moment that I have swapped for with friends who have the time to do a bit of



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serious study and collecting in the bush.

The plants may look like var. *hillii*, but once the plants begin to flower there is quite a difference. The scrapes are so long and heavy that most of them arch over and some are definitely pendulous. I have seen a few that are like a giant banksia in habit and very effective to my eye at least. Also some have a very upright raceme which catches my plant breeder's eye and sets me wandering off to the future, with visions of that perfect flower. The flower on most var. *grandiflorum*s are inclined to be a bit bunchy, but some clones combine that upright spike with a large and well-spaced blooms. In fact I have a couple that are well arranged as a good var. *speciosum*.

The flowers can run from around 40mm (which would appear to be a fair average) to well over 80mm on exceptional clones. I was lucky enough to be given a clone that regularly carries a raceme a full 600mm in length and flowers just over 70mm. And this on a division not long out of the bush! I wonder what a plant such as this is capable of when it really gets going?

The flowers on many var. *grandiflorum* open and set very nicely (wide and flat) as long as one gets sunny weather as the flowers are opening. If the weather is dull they will set in a more or less half open position, which rather spoils their appearance for show.

Maybe it is something to do with my culture; but I have found that for me var. *grandiflorum* is a very regular flowerer, with some clones flowering heavily every year as against var. *speciosum* and var. *hillii* that are inclined to be more biannual for me, making a lot of growth one year and flowering well the next time round.

I wonder just how dominant the golden colour is in var. *grandiflorum*? In theory, if it is as strong as it looks, one could mate it with an albino *D. kingianum* and get yellow or gold *D. x delicatums*!

Anyhow, I thought it well worth a try, so I did the bee act with the richest golden clone I could find and a very nice *D. kingianum* that gives every appearance of being an albino. The progeny are all planted out now (planted out in November '87) and are thriving: so hopefully we will see a new colour range in the old faithful cross in a couple of years time.

In straight species improvement we should see some fabulous colours from matings of top forms too.

The only inhibitions I have regarding these plants are as follows: will the length and weight of the racemes of this variety produce flowers that may droop and thus offend the judges in the resulting hybrids?

And will the results be cold-tolerant? This is of prime concern to southern growers and I hope most of them will give it a go as they saying goes.

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*D. speciosum* var. *curvicaule*.

As we work further north along the coast of Queensland to the Mackay region the form of *D. speciosum* again changes quite a bit and becomes known as var. *curvicaule* and this is the variety that carries on up to roughly the foot of Cape York.

Var. *curvicaule* is quite often different in the shape of the canes when compared to the southern forms of *D. speciosum* in the fact that these canes taper from either end. In the old days we used the word fusiform to describe this shape. (Hope it's still current!) The canes are also often rather flattened rather than round as other *D. speciosums*.

I have many clones of this variety that have quite strong colouration in the sheathing on the new growths; this fades as the sheaths dry out but is noticeable enough for some weeks.

Under Tamborine Mountain conditions I find var. *curvicaule* will make huge growths in the bushhouse and is inclined to be very much bi-annual in flowering for me, making many growths one year and flowering very freely the next.

In my limited experience pure white flowers are more common in var. *curvicaule* than the other varieties of *D. speciosum* although the colour range is otherwise typical of all *D. speciosums*, ranging from white through to cream and yellow. There may be deep golds up there as in var. *grandiflorum* but I have not

been lucky enough to see them as yet.

Spike habit is very similar to var. *speciosum*, ranging from semi-arching to very upright. Some of these have just about the most appealing arrangement I have seen in this great family of orchids.

The flowers in general are not as big on average as those of var. *speciosum* and var. *grandiflorum* — around 30 to 40mm normally — but with the odd hero up to 70mm or more. The flowers appeal to me with their more rounded segments than the varieties mentioned above and make me wonder what will happen in our hybrids when more clones are used and proven out.

A clone of this var. *curvicaule* loaned to me by Harry Klose is just about the best textured flower of any *D. speciosum* variety that I have had anything to do with up till now, lasting twice as long as most of my other clones. Flowers are only normal cream in colour but well spaced and large. The poor thing is always loaded with pods but still does extremely well.

A couple of years ago I crossed two lovely clones of var. *curvicaule* and as usual I got about a million seeds and proceeded to grow a cartload of them. I have trays of var. *speciosum*, var. *grandiflorum* and var. *curvicaule* sitting side by side on the benches plus one inter-varietal and each variety has shown differences right from planting out. The var. *grandiflorum* seedlings have grown by far the

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quickest, followed by the var. *curvicaule*  
with var. *speciosum* running a definite  
last. The var. *curvicaule* seedlings have  
one outstanding feature when compared  
to the others in the fact that they are all  
show strong pigmentation; the same as one  
gets in adult plants of var. *peduncu-*  
*latum*. Whether this will fade as the  
plants grow only time will tell.

The inter-varietal mentioned is between  
one of the best var. *speciosums* and the  
best var. *curvicaule* that I have yet seen,  
and by the growth of the seedlings there  
definitely seems to be a hybrid vigor  
there. They are twice as big as their  
straight neighbours on the bench. Having  
been born an optimist I am looking  
forward to seeing them flower and  
produce so-called super *speciosums*!

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hybrids such as D. Bardo Rose, D.  
x *delicatum* and so on may produce  
different features when remade with these  
different varieties of D. *speciosum*,  
especially if a better clone is used on the  
other side.

### D. *speciosum* var. *pedunculatum*.

In the days before Steve Clemesha sorted  
the varieties out this jewel of an orchid  
was just known as D. *speciosum* var  
*compactum*.

Var. *pedunculatum* is unusual that it  
goes over the Great Divide more so than  
all the other varieties that are more  
inclined to favour the eastern side of the  
range. The Atherton tableland —  
Herberton area is the heart of var.  
*pedunculatum* country, though I believe  
its range extends as far north as the  
Palmer River.

The name var. *pedunculatum* is very apt  
for this variety, as it describes its most  
important feature — the peduncle —  
which in common language is the stalk  
that carries the head of flowers on the  
plant. In other varieties the peduncle is  
usually only up to 10mm long, but in var.  
*pedunculatum* it can be anything from  
25mm to over 50mm!

Next to its peduncle the most out-  
standing feature of this variety is its size.  
(Or the lack of it!) Many clones never  
produce a cane over 50mm in length,  
whilst an odd giant might make almost  
200mm.

As one would gather from the dwarfish  
appearanch in general var. *pedunculatum*  
grows almost exclusively on exposed rock  
faces, mostly in full sunlight, where over  
millenia it has learnt that small is  
beautiful when it comes to controlling  
moisture loss in an environment that can  
be very harsh at times. The plants are  
rather dwarf overall, every compact, in  
fact the canes on some of the very small  
clones sometimes look very like a small  
potato. On the larger clones the canes  
taper from either end as does var.  
*curvicaule*.





*D. speciosum* var. *speciosum* 'Dorothy'. Grown from seed collected Hawkesbury area.

I find also that clones of var. *pedunculatum* that have been shadehouse grown for a number of years are gradually producing proportionally longer canes. Whether this is shade or just a better food supply I cannot really say, perhaps it is a little bit of both. On Tamborine Mountain I find that var *pedunculatum* is not happy sitting on a bench even though my benches are chest high, but prefers to be right up against the sarlon where it gets as much sun as nature can provide.

One feature of var. *pedunculatum* that I regard as unique is that it will flower for years off the mature growths but only from the apex of the cane. I have yet to see a genuine var *pedunculatum* flower from anywhere but the apex eye.

Most clones of var. *pedunculatum* are rather heavily pigmented; some showing a rich purplish shade on the new growths, the flower scapes and the underside of the leaves. This could be caused by the forms' exposure to so much intense sunlight in nature; in shadehouse conditions I find it disappears from some plants over the years. In my conditions I find the plants of var. *capricornicum* from the Carnarvon area retain more coloration than the var. *pedunculatum* does.

There is no doubt about var. *pedunculatum* being dwarf in habit but no way are the flowers dwarf when they emerge! I have seen flowers from white through to cream but none of the yellows or golds

that show up in the other varieties. Perhaps they are out there but I am yet to see them. To me there seem to be two different types of flower on var. *pedunculatum*: one that does not seem to open very well and the other opening to a large flat flower of great appeal.

This is the form that interests me greatly as a hybridist. I think a whole new field lies hidden in the makeup of this variety.

When trying to evaluate a variety of *D. speciosum* the first thing I like to do is to make *D. x delicatum* with it. This is a hybrid that we all are so familiar with that we can use it as a yardstick to see if there are any different qualities in the new parent. We have already learnt that var. *pedunculatum* allows the colour of the other parent to come through strongly and can produce very large flowers.

Whether it is general in this form or not I cannot say as yet but we do know that some clones of var. *pedunculatum* will produce hybrids that flower in less than two years from flask which is quick in my culture for a dendrocoryne.

I also have a penchant for dwarf-growing plants. I think there is great charm in a compact plant covered in flowers. I have always admired this type but never got around to doing anything about it until my interest was jogged again by orchid breeders from Japan visiting our nursery and going into raptures over plants of var.

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*pedunculatum* and *D. kingianum* var.  
*pulcherrimum*.

*Speciosum* var. *capricornicum*.

This was the last variety of *D. speciosum* to be described by Steve Clemesha in the Orchadian and as it is the one I know the least about I thought I would leave it till last.

As with var. *pedunculatum* the name is apt and self-explanatory as this orchid grows in a deep belt from the coast in to the Carnarvon Gorge along the Tropic of Capricorn.

To me as a deeply interested orchid grower it seems difficult to define a typical variety of *capricornicum*, as within its stated area there are forms that appear to me to be that different from each other as to be awkward to be all put under the one banner.

Over the last nine years I have seen a lot of plants from this area which gives me a little more confidence than I should have to talk on them; as I have yet to visit this area of Australia and I hate commenting on things that I am not familiar with. There are a lot of dedicated Australian native orchid growers in this area (south-east Queensland) who have had long experience in Northern Queensland and are very methodical in the tabulating of their collections. Their experience I am making use of here. I will deal here with the two forms that I am most familiar with. Some of these were given to me years ago in New South Wales and are well known to me.

The Carnarvon Gorge form itself has a wide range of flower habit; even though the clones from there all look similar to me. The plants I have seen are mainly fairly compact in habit, rather like the larger forms of var. *pedunculatum* than var. *curvicaule*. Here again the very harshness of the climate would accentuate the compactness. All the clones I have of this area are pigmented to some degree; one in particular being the heaviest pigmented clone I have yet seen.

Some plants flower with a heavy scape

of large, well-shaped blooms that one would be hardput not to mistake for var. *speciosum* — and with virtually no peduncle. At the other extreme there are clones with the peduncle and flowers of true var. *pedunculatum*. The rage is rather incredible for just one area.

The more coastal forms in this range are more like a scaled down form of var. *curvicaule* to my eye, tidy compact plants quite often with slightly fusiform canes and not much pigmenting in the ones I have seen.

Most of these have very good habit: nice upright spikes and well shaped flowers, very much like var. *curvicaule* with nicely rounded segments. Most of these have a peduncle of good length and carry their flowers high. I have also noted that there is a high percentage of these with clear white flowers; whereas the Carnarvon form has mostly creams and an occasional good yellow.

One thing that interests me as a breeder with this coastal form is its early flowering habit. I know clones that flower regularly late May and early June down here. I would love to know if they flowered the same time when they were in situ. If this early flowering is at all transferable we should be able to increase the length of the flowering season of our hybrids in future. We already know that these forms produce tidy compact plants. And hopefully nice flowers next spring as well.

### Acknowledgements

My thanks to all the orchid growers who, over the years, have taught me most of what I know. A tinge of sadness here; as I realise how time passes one by and how many of these friends have passed on over the last few years.

My thanks to Steve Clemesha and for the interest he aroused in Australian native orchids with his revision of *D. speciosum* in the early eighties. Also a thank you to Harry Klose and Morrie Clench for knowledge shared.

And to my daughter Ellen — who can type off heiroyphics! ●



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# Asymbiotic Germination of the *Rufa pterostylis*

Photography: Salvador Castelo  
Text R. D. Kramer

During the past few years there has been a resurgence in interest of the Australian terrestrial species particularly the genus *Pterostylis*. While this is encouraging to see the move has proven to create enormous problems from a conservation point of view. Land clearing and exploitation through excessive collection have already decimated several colonies and the trend appears to be growing. Native orchid growers and societies realised something had to be done and done fast. Through this foresight, nearly all states have created tuber banks whose primary aim is to distribute artificially grown tubers of both common and extremely rare species to interested growers.

The *Rufa* group, however, have been largely ignored as most do not reproduce

asymbiotic means. The symbiotic method perfected by Mark Clements is not used by us as this requires an intense knowledge of the various fungi and their association with the plants. Although having initially received very negative responses from the "noted authorities" (views which were cultivated by the misconception that Australian terrestrials would only germinate if the correct fungi was present) results have now been sufficient to firstly silence the critics and secondly to plan a further programme of tuber production for the grower, botanical and commercial market.

This article is intended to dispell the myths about germination, and most importantly to stimulate others which share a mutual interest in conservation and growing of these unique plants.

## Progression of Events in Germination

Species	date flaked germination		leaves	tuber planting out	
<i>Pt. rufa aciculiformis</i>	20.9.87	19.10.87	13.2.88	3.4.88	20.5.88
<i>Pt. gibbosa</i>	28.9.87	17.11.87	13.2.88	5.5.88	29.6.88
<i>Pt. mitchellii</i>	19.10.87	8.1.88	10.2.88	5.5.88	29.6.88
<i>Pt. hamata</i>	29.11.87	9.1.88	10.2.88	not yet taken from flask	
<i>Pt. woolsii</i>	29.11.87	10.1.88	5.5.88	5.6.88	10.6.88

vegetatively but merely form replacement tubers. This makes tuber distribution a non viable proposition as the acquisition of tubers can only be from rescue digs or illegal collection.

Both of these avenues have been unacceptable to the tuber banks. Some of these *Pterostylis* are so rare that mass production of plants is required to ensure their future. Two such endemic and rare species are *Pt gibbosa* from the Illawarra region and *Pt woolsii* from the New England Tablelands. Both of these species habitats have been extremely vulnerable to predation by over-zealous collectors, which have in some colonies already decimated large numbers of plants.

In the early sixties some research was undertaken by several people such as Warren Stoutemire of the USA and by our own Canberra Botanic Gardens, namely by G. J. Veitch, D. K. McInty and symbiotically by Mark Clements. To my knowledge, however, no large scale production of seedlings has been produced by these means for the keen grower nor for the commercial market.

For these and the above reasons we have been actively researching and flasking this group of plants using only

The method we employ to achieve the maximum seed germination is by "green pod". This has two main advantages namely the flasking of the entrie pod and most importantly better germination.

The pods (which are extremely small and fragile) are harvested when the pod reaches a transparent papery stage. Speed is essential at this stage as several hours later the pod has usually already split. I found that if pods were harvested earlier than this the seed was usually unripe and germination was extremely slow to non existant.

Flasks are housed in a temperature and light controlled environment at 22°C with 16 hours artificial light. Initially flasks are kept in total darkness to stimulate germination. Initially we found growth to be rather slow (at protocorm stage), but as leaves were initiated growth accelerated significantly.

Each progressive stage of development is shown by the photographs. From the time of seedling to planting out should not take more than 6-8 months.

### Deflasking

Remove the plants carefully as plants are very brittle. Place in a community pot



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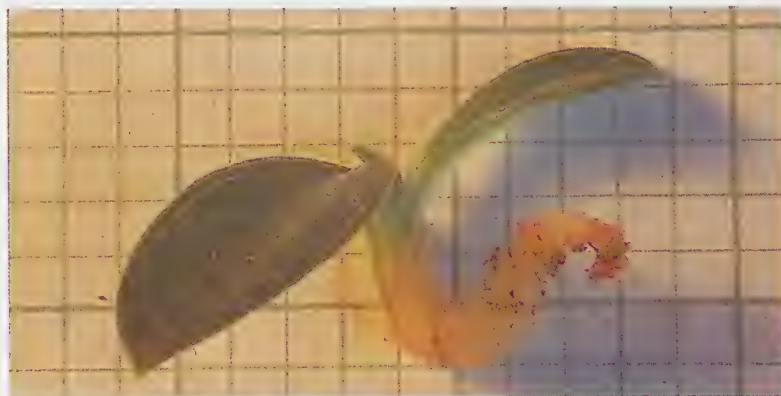
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5 stages of development shown from a 1.5 mm protocorm passing through various stages of development to the 22 mm seedling almost ready for planting out into soil substrate.



*Pterostylis gibbosa* seedling after five months of development.

and then place whole pot into a shaded area. This process is best conducted mid to late April just to be safe in case of an Indian summer.

Keep the season extended a little longer than usual and never allow young seedlings to dry out even in their dormant period. Tubers are too small to live through this excessive dry period.

### Plants Flasked So Far.

*Diuris sulphurea*, *maculata*, *semilunilata*, *laxiflora*. *Pterostylis alata*, *striata*, *woolsii*, *gibbosa*, *obtusa*, *hamata*, *rufa*, *mitchellii*, *furcata*, *abrupta*, *scabrada*, *parviflora* x *abrupta* (hybrid). *Caladenia dilatata*, *carnea*, *sericea*. *Glossodia minor*, *major*. *Corybas fimbriatus*.

Some mediums which have proven to germinate terrestrials successfully are: Knudson C; Lukes Medium; Dr Yinam Ngans formulation derived basically from Thomales medium.

These formulations are all available in several noted journals.

### In Conclusion

I genuinely hope that readers do not misinterpret the aims of this article as I am not advocating that the adult plants do not need a fungal association of some type in their lives, but merely wish to firstly dispel the misconception that seed will not germinate unless a suitable fungus is present.

All the fungal association does is to provide the seed and later on plants with a means of acquiring the necessary elements for growth by breaking them down to an acceptable form. Also I wish to evoke enthusiasm for the propagation by flasking asymbiotically.

This both will making them more readily available to the public but will also place less pressure on the wild populations. Come on. Give it a go! ●

R. D. Kramer  
P.O. Box 19,  
Wilton, 2571 N.S.W.  
Australia.



## The Ira Butler Awards

The Ira Butler Trophy Committee was set up in 1974 to continue to stimulate interest in the hybridising of Australian Native Orchids which was pioneered by the late Ira Butler.

Ira Butler, after his graduation from Sydney University, worked for many years as an economist with the Reserve Bank of Australia. He was a painter, photographer, bush walker and ardent conservationist. His interest in the Hybridisation of Australian Native Orchids was with the hope that as hybrids with larger and more spectacular flowers were produced, growers would be inclined to leave the original species in the bush where they belong.

After Ira's untimely death several of his friends promoted the formation of the Ira Butler Trophy Committee to encourage others to continue his work. From funds contributed by public subscription and from orchid societies, trophies are awarded annually in two categories, and in a third, at the discretion of the Committee at any time.

The annual awards are as follows:

**1. Champion Australian Native Orchid Hybrid Trophy** granted to the winner in Winter and Spring shows of



Sarc. Melba 'Jen' winner of the Ira Butler Trophy for 1987. Owner Sid Batchelor, photography Mark Webb.



selected Australian Native Orchid Societies and to winners in this class in State Orchid Society Shows and to Australian Hybrid Orchids granted A.O.C. awards between shows.

Nominations for these awards must be accompanied by colour transparencies which are required for judging in the following category.

**2. Champion Australian Native Orchid Hybrid of the Year.** This award is given to the plant judged to be the

best from the champions awarded in the above.

**3. Ira Butler Trophy for Outstanding Achievement** in the development of Australian Native Orchid Hybrids. From time to time nominations of persons whose contribution to orchid hybridising and related endeavours may be considered by the Committee. This award is not an annual award but granted when a nominee is considered worthy of the award by the Committee ●

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## Vale Abe Porter

On June 21, 1988 the orchid world lost a very highly respected member with the death of Abe Porter.

From almost the inception of the OS of NSW he had been an active member in so many ways.

In his earlier years he was a keen bush walker and very soon became intrigued with our native orchids and his interest continued for the rest of his life.

As a chemist with the State Abattoir Authority he practiced the application of scientific knowledge which was to be a great asset in his work with orchids. Also at the abattoirs he, from time to time, was called on to participate in the settling of industrial matters and this was an aid to his precise thinking and the marshalling of his arguments in committee and as a delegate to the Australian Orchid Council.

He accepted responsibility and became President of the OS of NSW and remained on the Committee until 1986. Here he gave generously of his ability. He became a judge of the Orchid Society and was in charge of the judging of the World Orchid Conference in Sydney in 1969. He was on the Editorial Committee of the Australian Orchid Review and was a member of the financial sub committee for many years.

As indicated above he was the NSW delegate to the AOC for many years. His ability as a photographer was utilised when he became the official photographer of the OS of NSW and for a time conducted groups in photography. He was a NSW representative on the Ira Butler Committee.

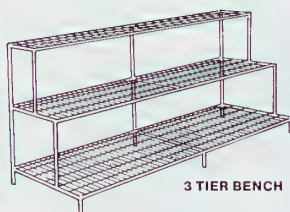
One of his great loves was the Eastwood and District Orchid Circle which he supported so well. He was a much sought after lecturer on the slab culture of orchids which he was called on to repeat to the 5th World Orchid Conference at Long Beach. He attended many World Orchid Conferences and was a good ambassador for Australia and was invited to South Africa in the preliminaries of the 10th WOC.

Few people have given so much to orchids.

As orchid people we mourn his death but are eternally grateful for the wealth of knowledge he shared with us and for the certain fact that our lives have been the richer for knowing Alwyn Bowdich Porter.

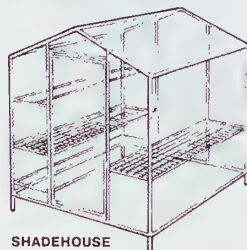
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C. Summer Stars 'May' x C. Highlight 'Angel Wings'  
Slc. Hazel Boyd # x Blc. Alicia Golden Dawn  
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Den. Susan x kingianum

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Lc. Scarlet Imp 'Irene' x Lc. Amberglow 'Magnificent'  
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Phal. (Wilma Hughes x Joseph Hampton) x (Winter Maiden x M. Puti) white  
Phal. Georgia Remaly x Blanca Grande white  
Phal. Musashino x Rudy Parma white  
Phal. Toki 'Pink Frost' x Romance 'Sweet Lisa' pink  
Phal. Lipperglut 'Pink Formal' x Romance 'Sweet Lisa' pink  
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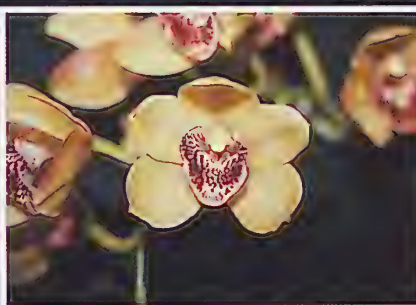
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**COMPOT & 2" POT:** *Dend. tofftii* x *lineale* (*Ricky Cornetii*) Blue; *Dend. 442nd Infantry* (*taurinum* x *lineale*); *Aeranthus ramosa* x *grandiflora*; *Dend. miyakei* x *chamelon*; *Dend. dearei* x *sanderæ majus*; *Dend. thrysiflorum* x *farmerii* "Pink"; *Gramm. elegans* x *rumpheanum*; *Gramm. tigrinum* x *elegans*.

**2" POTS & 3" POTS** *D. miyakei* x *amethystoglossum*; *D. cruentum* x *formosum* "Giganteum"; *D. helix* x *taurinum*; *D. miyakei* x *chamelon*; *D. smileae* x *miyakei*; *D. taurinum* x *gouldii*; *D. thrysiflorum* x *farmerii* "Pink"; *Gramm. rumpheanum* x *tigrinum*; *Aeranthus ramosa* x *grandiflora*.

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# *Dendrobium carronii*

## A SPECTACULAR MINIATURE FROM CAPE YORK PENINSULAR

By Dr P. S. Lavarack

(Queensland National Parks and Wildlife Service, Townsville)



WILLIAM CARRON, 1857

I first encountered *Dendrobium carronii* in August 1972 at Tozer's Gap near Iron Range. A fleeting glimpse from the Landrover window caused me to bring the vehicle screeching to halt while I went searching.

The plant I found had a long spray of about 20 flowers which featured the now-familiar colours of rich purple-maroon petals and bright yellow lip. The plants looked almost identical to a "normal" *Dendrobium canaliculatum* and at first glance, like many others, I thought this to be a form, or perhaps a variety of that species.

About the same time a few plants from various locations were gradually finding their way into cultivation where they were usually known as the "pink form of *D. canaliculatum*" due to the impression of a pink colour which was gained when looking at a flowering plant from a distance. Some of these were used as parents in some exciting hybrids, although the problem of there being no formal name has led to confusion with some of these.

I next met with this species on the Jaradine River in August 1973 when I collected a specimen from the many seen which was, 10 years later, to become the holotype of a new species.

I subsequently collected specimens near the Rocky river and other locations east of the McIlwraith Range and in the Hann Creek area near Carron Valley also on the east coast of the Peninsula.

About the same time (August 1976) Jon Dodd was noting something peculiar about some plants of *D. canaliculatum* which he had collected near Hula in the Central District of Papua New Guinea. These plants turned out to be identical with those of eastern Cape York Peninsula and John considered them as quite distinctive. Similar plants have been reported from other New Guinea localities such as the Bensbach River in Western Province.

Many other exciting finds on Cape York Peninsula such as *D. tozerensis*, *Oberonia carnosae*, *Malaxis fimbriata*, and *Cadetia collinsii* occupied my attention for some time and it was only when considering the problem of *D. semifuscum* and *D. johannis* that it occurred to me to re-examine the so-called pink form of *D. canaliculatum*.

One of the most important factors which Dr Cribb and myself considered in elevating *D. semifuscum* to the status of a separate species was the separation of habitat. *D. johannis* occurs in the moister habitats of eastern Cape York Peninsula, while *D. semifuscum* prefers the drier, harsher habitats of the central and western peninsula. The separation between *D. carronii* and *D. canaliculatum* is almost identical. *D. carronii* is never found in the harsh, very seasonal melaleuca woodlands which are so densely populated with *D. canaliculatum*. Instead it is found in moist areas such as watercourses or on the moist eastern sides of mountains and generally in areas where the more luxuriant and diverse vegetation indicates a more reliable year round rainfall. These are situations which never dry out to the same extent as the *Melaleuca* woodlands.

Taking this hint I looked more closely at the flowers of the "pink form" and immediately came to the conclusion that the flowers were different enough to be considered as a species separate from *D. canaliculatum*.

In correspondence with Dr Phil Cribb of Kew, I discovered that he, in the preliminary work to his book on "The Antelope Orchids" had reached the same conclusion. We then jointly described this new species as *D. carronii*.

In searching for a name I thought it would be appropriate to name this species after William Carron. Carron was the botanist with the Kennedy Expedition and was one of the 3 survivors of the most tragic episode of Australian exploration.

Carron was left in charge of seven men at Little Roundback Hill, just north of Iron Range while Kennedy and four others pushed on to their destiny near the

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*Den carronii* 'Pink form' an exceptionally large plant growing in situ.

tip of the Peninsula. After six weeks of near starvation and under constant threat from Aborigines, only Carron and one other remained alive to be rescued. They were in such bad condition that hip bones were actually protruding through the skin. The Aborigines threatening imminent attack on the small rescue party and it is little wonder that Carron's specimens were left behind. Carron, in his journal, comments "all my specimens were left behind, which I regretted, for, though much injured, the collection contained specimens of very beautiful trees, shrubs and orchideae"

Among these abandoned specimens it is likely there was one of *Dendrobium carronii* as it was the flowering time and the expedition has passed through places where it is abundant. Rarely can a person have been more worthy of honour of having an orchid named after him than William Carron.

*D. carronii*, as mentioned previously, is a plant of moister areas, growing on a variety of hosts including *Melaleuca viridiflora*, *M. leucodendra*, *Welchiodendron longivalve* and *Lophostemon grandiflorus*.

It is usually a true miniature, with bulbs 2-4 cm long and rarely growing into a big clump. It flowers when very small and the flowers are often bigger than the pseudobulbs. When not in flower it is difficult to distinguish from *D. canaliculatum* var *nigescens* which is sometimes abundant nearby (but rarely in the same habitat). The plants are often darker and the leaves even more fleshy in *D. carronii* and usually, but not always, the flowering stem is produced at right angles to the bulb.

*D. carronii* has proved to be not the easiest plant in cultivation and is probably best tied to a slab of natural cork with some backing of fibre. It requires a dry season in winter, but humidity should be kept as high as possible at all times. It is however well worth further experimentation into the culture as this is a most colourful miniature and one with an equally colourful history ●

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*Den. carronii*, note the long petals, short sepals and the distinctive colouring.



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# Past, Present & Future of Australian Native Dendrobium Hybrids

Phil Spence

Some 60 years have now passed since the first all-Australian man-made hybrid was recorded. In the early days, as in any other type of breeding, there was very little interest and only the very devoted Australian native enthusiast would show some appreciation of the few hybrids that were available. In 1928 W. Schmidt registered *Dendrobium* Ellen, a cross of *D. kingianum* by *D. Tetragonum*. This first cross produced small mushroom-pink flowers in great profusion with with a star-like shape and they are quite considerably easier to cultivate than the species.

Now, some 60 years later, the tables have been turned and most orchid enthusiasts would be very proud to own any of the latest hybrids. The majority of people are interested in the cooler growing hybrids but there is an increasing interest in the warmer to intermediate types which are being developed. This interest however is in the northern states of Australia.

As new hybrids are flowering it is becoming very obvious that a lot of the primary hybrids have to be re-made but with selective parents that have been produced by line breeding and the careful selection of the dominant factors in these seedlings e.g. *Dendrobium* Aussie Springtime. In this hybrid it is pretty obvious that *D. kingianum* var *Silcockii* was a distant species.

A few of the more successful hybrids that are producing seedlings that have outstanding quality are Den Eureka, D. Star of Gold, D. Peter, D. Gillian Leany (white with coloured tip type), D. Aussie Ira, D. Sunglow, D. Aussie Mist and to a lesser degree, D. Hilda Poxon.

Just in passing it is quite common to hear at an orchid society or group a person boasting that he has just flowered "the darkest red" or "the biggest" *Silcockii* or even "the greatest" *D. kingianum* in the world. Obviously there are a lot of good *D. kingianum* out there.

*Den. tetragonum* was neglected in this way in the first 50 years. The main reason for this has been the finding of *Den tetragonum* var *Giganteum*. The first sibling crosses are now flowering and interest has started to grow.

Most of the crosses have been with *Giganteum* crossed with southern forms from around the Coffs Harbour district. One interesting thing about this line of work is that the seedlings are producing a more conventional type of raceme and are easier to cultivate in pots.

*Den speciosum* is also still at the first generation stage of line breeding with the odd second generation appearing for sale. When looking back it is very surprising that *D. kingianum* is now entering the sixth generation while the rest of the species the hybridist are using are just starting to be line-bred.

*Den falcorostrum* has produced some magnificent hybrids eg first generation D. Bardo Rose, D. Peter and surprisingly

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even better second generation eg. Den Delicate Falcon, D. Aussie Joy yet very little work has been carried out on the species. No one has found an albino clone, a dark orange clone or one with heavy red markings radiating from the centre of the flower. All should be possible.

D. Aussie Bonanza and Aussie Freckles were two crosses which brought about a further interest in *D. falcorostrum*. When crossed with second generation *D. kingianum* hybrids the wide range of should be possible.

D. Aussie Bonanza and Aussie Freckles were two crosses which brought about a further interest in *D. falcorostrum*. When crossed with second generation *D. kingianum* hybrids the wide range of colours is truly unbelievable as the colour ranges from white, yellow, light green, blue grey, through to dark magenta. Some of the colours are also overlaid with magenta spotting, giving a warm red effect.

Den Hastings, a primary cross between *D. fleckeri* and *kingianum*, has produced some interesting results. D. Hastings x *D. speciosum* = D. Wonga, good shaped flowers with rich yellows and oranges with the odd white have emerged. Den Aussie Gift = D Hastings x D Aussie Ira. Again a good cross result with many different colours from brown reds with white lips to yellows with lilac markings.

On the odd seedlings the flowers have a femberate labellum. One of my favourites Den Aussie Starlight = D Aussie Ira x *D. speciosum* is producing plants that are very vigorous with flowers of good size and extended flowering season.

Aussie Starlight x Peter and Aussie Starlight x Eureka = Aussie Zest. Den Aussie Angel = Aussie Ira x *D. bigibbum* has been very fertile as a parent and all the seedlings are showing great promise. D. Aussie Angel x Sunglow, Aussie Angel x Hilda Poxon, Aussie Angel x Eureka, Aussie Angel x Aussie Ira.

In all the seedlings there seems to be a very strong influence of *D. bigibbum* in the growth habit, but they are all growing in cool conditions. Den Aussie Mist = Den Peter x Den Bardo Rose, has two injections of *D. falcorostrum* in its parentage and from all I have seen from onward breeding from this hybrid, quality can only result.

As the laws are now becoming more restricted on the collecting and exporting of native species, it is now very obvious that most native growers are changing from species to hybrids and have made the decision to leave nature alone and to develop superior species and hybrids than what nature has to offer ●

Phil Spence  
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D. Aussie Bonanza (D. Aussie Ira x D. falcrostum).



D. Aussie Luck. (D. Star of Gold x D. Aussie mist).



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# AN ACCOUNT OF EXPERIENCES IN DEVELOPING THE GLOUCESTER LINE OF *canaliculatum* HYBRIDS

K. A. MacPherson

Very early in my lifetime, I had much appreciation for our native plants in flower, particularly our Golden Orchid *Den. discolor* and our *Dendrobium canaliculatum* or Titree orchid.

With the coming of school age, my parents gave me a quiet pony to ride the three miles of lonely bush tracks, which to day are good bitumen roads of the district, to our country school at Strathdiekie.

It was at this time — around the 1920s in the early development of sugar cane farms to supply the Proserpine Mill when most cane crops were grown on hillsides with hand labour, clearing and burning off areas of rain forest annually for cane planting, with large numbers of native orchids being destroyed. In springtime along creeks and gullies, huge plants of *Den discolor* would develop large showy heads of golden to brown flowers that would attract attention someday. In those days of early settlers, existence and a crust was the prime necessity — no time

to spare for the love of flowers in leisure, this I realised very quickly. Plant lovers were few and far between, only several in the district at that time.

In the years following school, the desire to make a collection of orchids became ever present. Orchid species were few and far between, which were suitable for cultivation for show. Small pieces of exotic orchids, principally Indian dendrobies imported, were eagerly sought. Mr Peter Le Feuvre of Ayr who had a fine collection of Cattleya Orchids, often ran a full page of Cattleya flower pictures in the North Queensland Register at that time. This did much to bring orchids to the forefront, also quite a lot of information would be given in garden notes — how to grow Orchids from seed by sowing seed around the roots of older plants. By trying this same success was gained with *Phalaenopsis amabilis* and *P. schilleriana*. Late in the 1940s seed sowed in cultures appeared to be the answer, and of

course the practice of hybridisation seemed assured of more success.

1950 . . . Now was the time I thought to make a worthwhile contribution to our native orchids. The regenerative powers of the Golden orchid was obvious because one could see small plants appear in restricted forest areas — why not combine these features with our *D. canaliculatum*. The beauty, and hardiness to survive under hostile conditions of heat and drought in the habitat. This fact I set out to achieve.

It was not quite as easy as said to be done. Quite a few disappointments, and after 10 years of efforts to establish a stable form of hybrid, I began to think I would have to give the idea away altogether. Some 30 odd crosses were made with *D. canaliculatum*, nine of which, one was to become *D. Gloucester Sands*, named after the lovely beaches where I lived near Gloucester Island.

## ATTENTION READERS AND ADVERTISERS

This issue has been increased to 64 pages. The request for advertising space has been so heavy we have had to add a 16 page section to ensure adequate editorial space.

Many of you will now be aware, from our survey, of the proposal to go to 6 issues commencing 1989.

With one or two exceptions, and appropriate advice to caution us to ensure editorial quality, we have had a most positive response to publish 6 issues per year.

Commencing 1989 the Australian Orchid Review will be published on the first day of February, April, June, August, October and December.

Notwithstanding further postal charge increases the problem of long delays in deliveries (and complete loss at times) frustrates us as well as our subscribers and

advertisers. Further representation has been made to Australian Post to address this problem.

The cover price of the publication will not increase and Australian subscribers will pay less than the cost of 6 purchasers at the newsagent.

Circulation of the Australian Orchid Review has substantially increased in 1988 with the introduction of our new size and layout.

In addition to improving communications for our advertisers, the team is committed to producing a publication of high interest and quality for our readers.

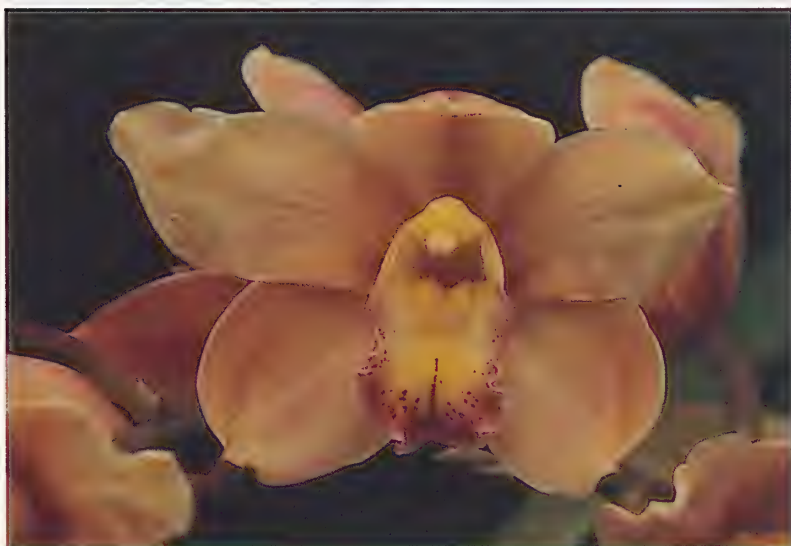
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**Paul Kelly  
PUBLISHER**





A group of dwarf ceratopse *Dendrobiums* in development.



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Having now managed to make the crosses, affected by the usual faults we are now well acquainted with, began to show up — such as empty pods, no viable seed, and small quantities of fertile seed. Each cross made with different parents which I thought had the attributes to be successful, such as strong vigorous plants, plants of average stature and less than average stature, the later two classes proved failures.

Resultant seedlings were weak in growth and sterile. One cross made to strong parents *D. discolor* of poor colour, was to become admired as *D. Gloucester Sands* var. "Brilliant" for its lovely colours, and it was sterile, thus some clues were beginning to show up. For example, such crosses attempted that failed to measure up such as *D. aries* x *D. Gloucester Sands* plants grew well, flowered poorly and were abandoned. *D. Talasia Blue* N.G., tiny blue flowers — result: failed to make the grade. *D. Schulan* x *D. Gloucester Dawn* flowered quite well but failed to make the grade physically. *D. discolor*, a "superclone" x *D. Gloucester Dawn*, a fine hardy plant, flowers hardly noticeable, such are the problems encountered and when a break came to hand a number of same crosses followed it on.

Up to this stage of effort I had never





(*D. undulatum* x *D. Sunshine Hill*)  
x *D. Gloucester Peer*.

*D. Lim Tie Hooi* x  
*D. Prince of Gloucester*.



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understood what the study of polyploidy of plant meant. At this time I had the chance to look into the works of Mendel on hereditary laws, known as the Mendelian theory. This gave me the grounding of some problems I was searching for.

The terms polyploid can be applied to any naturally occurring species of any plant, most natural hybrids are not — either being diploid or triploid being mainly sterile on the male side. Sterility occurs in the crossing of two widely divergent species to begin with — meaning the chromosome or characters set up does not match together evenly at fertilisation time and fertility appears to be the first character that is lost, never to be regained by the individual. However, in producing this situation nature appears to compensate the loss of fertility in some of the progeny with the most beautiful floral production. Hence the most beautiful flowered plants are not necessarily the best parents.

It is noted that in the past the use of triploid parents or non fertile parents was considered a good commercial practice, on account of the foregoing experience where plants were passed out for cultivation by collectors where some gain beautiful plants, others are just lost or fail.

Referring back to hereditary characters of Mendel I understood that it is

absolutely essential to use polyploid parents for successful crossing to produce an eventual stable hybrid. The natural law stands that the use of two diploid parents will produce the like of two in 16 progeny with all the necessary characters for its health, fertility, and existences with the chance of improved forms by the mating of two good forms plus many more near equal. The recovery rate from germination can be from 70 to 90 per cent.

While there can be a few other reasons physically why plants fail to gain or set seed. The use of triploid parents or non fertile ones as earlier stated can result in commercial production of few plants of exceptional beauty for first generation. The results will vary down from 70 to 25 per cent recovery rate with much rubbish and the chances are rated at something like 400,000 many of which will not survive beyond a few flowering periods or will flower themselves to death.

If by chance a second generation of these plants is attempted, the chances of gaining anything worthwhile is very small — from 25 to 5 per cent recovery, and most are inferior to original parents of diploid character, has been my experience.

Today, after years of perseverance, I have now produced a number of stable forms all bearing *D. canaliculatum* character of short stature, which I

originally sought. A number of these plants have been registered and more to be named as worthwhile. Having established hybrids of diploid character, the way can be easier in the future. True, the many colour combinations of *D. canaliculatum* did not survive instead glossy yellow, green yellows and bronze tints, some violet tints are the order of the day, but this can be rectified in later generations.

Today, I marvel at the large number of *D. canaliculatum* crosses that are appearing in collections and nursery lists. Many beautiful plants among them being successfully cultivated.

For all this I pay tribute to the people that have so perfected the cultures to bring these plants about from the days of Professor Knudsen, New York who first successfully proved it could be done in 1932.

In the development of my early crosses of the Gloucester Line, my problem was to obtain successful sowing and germination by those who did know something about it. I probably only realised the very easy crosses to make then. Today with green pod culture and even tiniest quantities of seed can be successfully grown, since this pioneer crossing on my part 35 years back ●

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We are deflasking, and growing on, some outstanding orchids for the 1991 *Australian Orchid Conference*. Here's a sample:

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Our April catalogue has nearly sold out. We hope to have a new one out in November, so if your name is not on our mailing list drop us a line, and you will receive a copy as soon as it becomes available.

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## LETTERS

Dear Sir,

Some of our members have expressed concern that a few Advertisers are using a P.O. Box number only and not giving an address. The feeling is that some advertisers of this type could lower the tone of the magazine.

A. Bennett (Hon. Sec.)  
Hervey Bay Orchid Society Inc.

Editor's Note: *Any comments from advertisers?*

### What makes a good stud? (A.O.R. SPRING 1987)

Dear Sir,

I hope I may be allowed the courtesy of a reply to Bob Nicolle's article in the Spring 1987 Australian Orchid Review. As is typical of Bob's articles, I had trouble deciding whether it was an unpaid advertisement or not.

To say that when an orchid parent produces progeny superior to itself there is never any point in using that parent again is patently drivel. Many unawarded or seemingly humble parents have produced highly awarded progeny and many showy and highly awarded orchids are dismal failures as parents. Can Bob Nicolle explain why Sleeping Dream 'Tetragold' AM/RHS (not bred by Valley Orchids but exhibited by them) has proven such a dismal parent when its parent Sleeping Beauty has produced and is still producing quality offspring?

For Bob Nicolle to say that in my article on Modern Cymbidium hybridising parents such as Claude Pepper, Coraki 'Margaret' 4n and Solana Beach 'St Francis' 4n were recommended is indeed correct. However his limited knowledge of cymbidium hybridising again trips him up. The Claude Pepper tetraploid remakes did not flower until 1980 when they gained numerous awards. Coraki 'Margaret' 4n did not flower until 1981 and was awarded B/CSA in 1982 while Solana Beach 'St Francis' 4n gained a B/CSA in 1977. Their first progeny did not flower until the 1980s which certainly makes them modern parents.

I am surprised that Valley Orchids discarded varieties such as Rincon 'Clarisse' 4n HCC/AOS and Firewheel 'Ruby' 4n HCC/AOS over 10 years ago due to their inherent faults. For Bob's information Valley Orchids did not even



# TO THE EDITOR

acquire these two parents until 1977 and then they would have had to acclimate to their Southern Hemisphere environment before flowering. In any event Bob's garrulous predecessor at Valley Orchids was in charge of Valley Orchids in those days. I am surprised that someone at Valley Orchids decided to meristem an orchid with inherent faults for they were pleased to offer Firewheel 'Ruby' 4n meristems at their usual fancy prices just a few years ago! And much to my surprise when I referred back to the 1987 Valley Orchids catalogue I found seedling flasks offered of the cross Rincon 'Clarisse' 4n x Valley Crimson 'Magnificent' from a crossing made in 1985. Discarded over 10 years ago Bob — I think not!

My article specifically mentioned converted tetraploid parents yet he takes me to task for not mentioning Alexander 'Westonbirt' FCC/RHS 1922. Does Bob know something that no one else in the Cymbidium world does, namely that Alexander was 40 years ahead of the field in his use of Colchicine. Far from my claiming that Candeur 4n was the white parent of the future, I cautioned that it "is up against very stiff competition when compared to the white tetraploids extant". The AOR article pictured a plant of Sleeping Ransom, a seedling flowering for the first time with 14 spikes from one bulb and two new growths. Bob suggested this was a type of exaggerated characteristic hybridisers should look for. Well the owner of this supposed wonder plant is Bill Bailey and he just happens to be a friend of mine. So I asked him a few questions:

(1) Did all the spikes come to maturity? No, many of the buds dropped.

(2) Were the flowers any good? It was a clear yellow pure colour but the flowers were not exceptional.

(3) Did the plant ever repeat its multi-spiking performance? The plant grew on and has been divided but the most spikes it ever had again was seven. Come on Bob, old time growers know these multi-spiking freaks and also know that they hitherto have failed to pass their characteristics on.

While we may never be able to resolve our differing ideas on Cymbidium hybridising, I would like to throw out a little challenge to Bob. As readers know the 13th World Orchid Conference will be held in Auckland, New Zealand, September 1990. Ideal for Cymbidium growers in Australia, South Africa and New Zealand to show off the best of their

new introductions. If Cymbidium hybrids from Featherhill Exotic Plants — Geyserland Orchids do not win twice as many prizes and awards in Auckland in 1990 as those originating from Valley Orchids, I will personally donate \$5000 (Aust) to the Australian Orchid Foundation. Care to match the offer Bob?

Andy Easton,  
Rotorua, New Zealand.

Dear Editor,

The members of the Aspley Orchid Society Inc. extend an invitation to all orchid growers attending either World Expo 88 or Orchid Expo 88 to visit us and enjoy some good Brisbane hospitality.

Our Spring Show is on September 17, 18 at the Community Hall, Edinburgh Castle Road, Wavell Heights, Brisbane. Meetings are held at the same venue at 7.45 pm 1st Thursday night of the month and at 9 am 3rd Thursday morning of the month.

Please contact our Society's secretary and Hostess, Mrs Glenda Kubler. Phone 265 4050 or write P.O. Box 67, Aspley, Queensland, 4034.

Glenda Kubler  
Aspley, Qld.

Dear Sir,

It has been a major concern of our Association that there should be one organisation catering for the advancement and conduct of the orchid industry of Australia. Apart from the Australian Orchid Exporters Association, no other group caters for professional orchid growers.

Our Association has advanced the role of its members exporting orchids from Australia since the 1950's. However, there is now a keen awareness of the dynamic changes in technology, marketing and organisational structure that have occurred within the industry.

Following many growers expressing the need for a united body for both our members and for orchid industry participants, we feel the time is now opportune to inaugurate a professional orchid industry group within Australia. Its purpose would be to promote, protect and perfect the orchid industry.

The recent successful submission to the Commonwealth by our Association concerning the imposition of fee for service in the issue of Phytosanitary Certificates,

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## Letters (continued)

resulted in dropping of the charge for the certificates. This is a good example of the value of an industry organisation to lobby on behalf of its members.

Many other advantages are to be gained in the field of promotion and technical innovation and research. All these matters will be canvassed with you later.

Therefore, our Exporters group are proposing to alter their articles, permitting the admission of all professional enterprises associated with the orchid industry.

We further propose to call a joint meeting of our members and all who will be interested in joining an Australian orchid industry group. The proposed time of this meeting will be during the 11th Australian Orchid Conference, to be held in Sydney, between September 18 and 25, 1988.

We invite your attendance at this meeting, the details of which will be supplied as soon as preliminary arrangements are confirmed. Meanwhile, your intention of support or interest in the proposed organisation would be welcome.

Eric K. Leggett

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Dear Sir,

South Australia has been recognised for many years as a State which has an enthusiastic group of Cymbidium growers. Most readers of the Australian Orchid Review would be aware of the established Nurseries, Adelaide Orchids and Valley Orchids, two well respected Orchid establishments world wide.

Over the past 10 years however many other keen Cymbidium growers have established, or are establishing, their very own niche in the Orchid world — commercial, semi-commercial, and indeed a committed, and wide ranging group of hobbyists. A perusal of awards granted to South Australian growers, the degree of hybridising being undertaken, and the overall enthusiasm directed towards Cymbidium showing, is an indication of the level of participation in this State.

During 1987 a number of these growers met to discuss their needs as progressive Cymbidium enthusiasts, and what could be done to fill a perceived void in information, debate and promotion in the area of Cymbidiums. A number of options were considered over a period of six months, with the advantages and disadvantages of various actions being contemplated.

Over time the initial core group grew with monthly meetings being held at a local watering hole, the Kings Head Hotel. Over a meal, and one or two drinks, a camaraderie developed, with considerable trust and friendship being established. Critical appraisals of each others' plants and breeding programmes was a feature of these very early meetings — not to mention the Pepper Steaks!

Whilst the social atmosphere was enjoyed by all, it was felt that we needed to expand our horizons, and involve more growers in our activities. Accordingly a Public Meeting was called for May 24, 1988. How many people would attend? Would there be support for such a specialist group? What direction would the group take? On opening night (yes it was very much like a new stage produc-

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tion — will the audience like it, or will tomatoes be thrown?) a total of 105 people attended.

The program featured a cultural segment, discussion of Lunagrad "Elanora" and its influence on modern day hybrids, and a review of plants exhibited by those in attendance. The emphasis of the meeting was on audience participation, as distinct from the usual picture theatre style format. At the conclusion of the meeting, enthusiasm was sky-high. Support was clearly evident for a club focussing solely on Cymbidiums.

Given the response, the original steering committee set forth to establish a new Orchid Club. At the second meeting, with 108 people in attendance, a Constitution for The Cymbidium Club of South Australia was adopted, and a Committee appointed by the foundation members. Dean Roesler has been appointed Editor of the South Australian Cymbidium Orchid News, the official Club bulletin. Dean is a natural for this demanding position, and has produced a bulletin that sets new standards for Orchid Clubs in Australia.

The Cymbidium Club of South Australia has emerged from a genuine need for a specialist Orchid Club, and new established, has an exciting future. Indeed its short and long term goals will see it as an innovative and prominent Club that will have considerable impact for the Australian Orchid movement in the future.

I take this opportunity to formally announce the "birth" of our Club, and extend a warm invitation to interstate and country visitors to attend our meetings, held on the 4th Wednesday of each month at the Australian Mineral Foundation, Conyngham Street, Glenside.

Should anyone wish to receive our bulletin, contact should be made with the secretary.

The Secretary,  
The Cymbidium Club of SA,  
c/105 Bolivar Road  
Salisbury North 5109.

## BOOK REVIEW

### The Dendrobium Family

Editor: Peter R. Head  
Printer Glasshouse Country Printing  
RRP \$9.00 — Soft cover

A mammoth task undertaken to complete a list of all dendrobium registrations up 'till November 1987.

The lists are in 4 parts, species, natural hybrids, primary hybrids and complex hybrids. The *Dendrobium nobile* or softcane hybrids are marked.

A handy addition for all orchid growers especially those specialising in dendrobiums, hardcane, softcane, or native. Obtainable from: Peter R. Head, P.O. Box 551 Alderley, Qld 4051.

### Orchids of South-eastern Australia

This publication is a poster compiled and published by the Gould League of Victoria.

It illustrates 36 common terrestrials of South-eastern Australia, known by common name, on the reverse side is a table of scientific names and habitat, etc.

The size of the poster is 48cm x 73cm and the cost is \$5.40 plus postage and handling.

It can be obtained from: Gould League of Victoria, P.O. Box 446 Prahran 3181.

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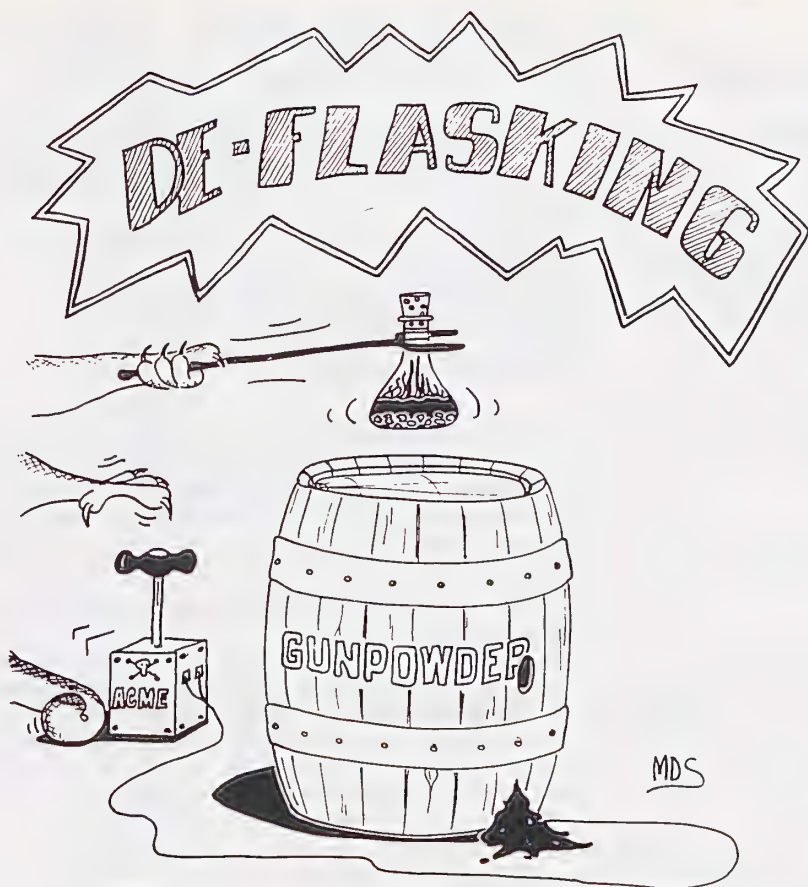
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# *Sarcochilus hartmannii*

## ITS DISTRIBUTION AND CULTIVATION David Banks

*Sarcochilus hartmannii* is one of the most popular of our native orchids and is certainly my favourite of the Sarcanthinae. It has succulent leathery, but brittle leaves up to 24 cm long and 3 cm wide. Racemes up to 30 cm long are either erect or arched and carry up to 26 densely packed white to cream flowers with some degree of brown to reddish markings in the centre of the flower. *Sarcochilus hartmannii* is distributed from the Ellenborough Falls in the headwaters of the Hastings River and sporadically along the east coast of NSW to as far north as Nambour in Southern Queensland. It can be roughly grouped into two main forms i.e. the 'Southern' form and the 'border ranges' form.

The 'southern' form is distributed from the southern tributaries of the Hastings River in Northern NSW to the Macleay and Bellinger River systems approximately 150 kilometres north along the coast of NSW. It usually grows at about 600 metres altitude on ranges which are not in close proximity to the sea. In the southern part of its distribution it tends to grow near creeks in rather shaded conditions but can also be found on exposed cliffs. This form is a very vigorous grower, with light green leaves which are sometimes on the yellowish side. The leaves are usually larger and thinner than the same species from the border ranges. The main difference is in the flower and flowering time.

The 'southern' form initiates its racemes in late March and flowers between July and September. The flowers are a deep cream with brown markings in the centre. The flowers are generally very open with gaps between the segments. It does very well in cultivation, grown in the bushhouse under 70 per cent shade cloth, and I personally believe that it deserves to be given varietal status one day.

The 'border ranges' form centres around the NSW/Queensland border and continues spasmodically north through Toowoomba into the ranges behind Nambour in southern Queensland. This is the form most commonly grown and is certainly one of the most beautiful of our native flora. The best clones of this species have been found at altitudes of approximately 800 metres on the crater, radiating from the extinct and massive Mt Warning volcano near Murwillumbah in north-east NSW. Probably the best known forms came off a small

hill at the western end of the Nightcap Range — known as Blue Knob. Over the years intensive collections from there have resulted in its virtual extinction from this locality. It is no wonder now that the exact locations of existing colonies of this species are a closely held secret!

A lot of superior clones came off Blue Knob — such as *Sarcochilus hartmannii* 'Blaxland', *Sarcochilus hartmannii* 'George' AM/AOC, *Sarcochilus hartmannii* 'Eric Marygold', *Sarcochilus hartmannii* 'Cardwells' and *Sarcochilus hartmannii* 'Keri' AM/AOC, but so did a lot of ordinary ones.

Unfortunately, a majority of people refer to *Sarcochilus hartmannii* var. *blue knob*. It is not a variety! — just a location from which a number of good clones were originally collected. Similar clones have been found on and near Mt Lindsay and other nearby rocky outcrops.

The plants from the border ranges are a lot thicker, broader and darker green than

the 'southern' forms. The flower racemes are initiated in June and flower about six weeks later than the 'southern' forms. The flowers are a glistening white with varying specks of brown in the centre. A lot of good clones will cover a 10 cent piece, while the odd outstanding one will fill a 20 cent piece. On these clones the segments are wide and overlap to form a well filled-in circle. These clones are always sought after and have been the foundation for a number of hybridising programs.

There are albino forms, but these are few and far between — these being white with yellow to cream centres.

Some of the most eye-catching clones of *Sarcochilus hartmannii* have come from the Numinbah Valley in south-east Queensland. They are vigorous growers which send out side growths freely and produce large white flowers with distinctive brownish-orange centres in a similar fashion to *Sarcochilus fitzgeraldii*. At

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present, this form is not common in cultivation.

It is quite possible that the Numinbah Valley form is the plant described by R. D. Fitzgerald as *Sarcophilus rubicentrum* in 1884 — even though he was led to believe that the clone in question was collected from the Atherton Tablelands in north Queensland.

Unfortunately, due to a typographical error in A. W. Dockrill's extensive work, *Australian Indigenous Orchids*, a lot of people still spell this species incorrectly. Remember it has two "n"s and two "i"s — please check you labels!

I grow this species in squat black plastic pots in a mixture of 50 per cent gravel and 50 per cent pine bark in the bushhouse under two layers of 70 per cent shade-cloth. The gravel/bark mix allows for air circulation and perfect drainage, so waterlogged pots are seldom a problem. Plants are on wooden benches which are approximately 60 cm (2 feet) off the ground and receive sunlight for most of the day.

Watering requirements for the plants are influenced by both the seasons and prevailing weather conditions. Remember, if in doubt about watering, it would be wise to leave it 'till tomorrow. During the warmer months I water just before sunset and in the cooler months in the mornings. On average I water the plants twice a week in summer, to once a fortnight in winter. They should not be watered during the heat of the day or you may rot the growths of these monopodial plants. For similar reasons, plants are not watered late in the day during the colder months as freezing could occur if the temperature drops lower than anticipated. It is always best to be on the safe side. One good way of checking the moisture level in the pots is to take the plant label out. If it is moist, then you can hold off the water for another day or two. Remember that if the top layer of the mixture is dry, do not assume the rest of the mix is the same. As mentioned earlier, it is better to underwater than overwater. We do not fertilise any of our *Sarcophilus* species or hybrids. However, diluted applications of any organic fertiliser will do no harm to the plants. While *Sarcophilus hartmannii* grows steadily throughout the year, it really gets a kick on in autumn, as evidenced by the number of new roots and shoots.

In nature, these plants receive plenty of fresh air and, due to the aspects in which they grow, have perfect drainage. When growing virtually any orchid, perfect drainage is a requirement — with *Sarcophilus* it is a necessity. It is important that this species is kept slightly moist year round as it has no rest period. Because *Sarcophilus* plants do not have pseudobulbs, they need regular water-





*S. harmannii* 'Eric Marygold' collected in the early 1950s. Flower size of 20¢ piece.

ings as their only storage organs are in the leaves and roots. In the wild these plants develop quite extensive root systems to trap moisture. *Sarcochilus hartmannii*, like the other lithophytes, has thick fleshy roots which scramble over rocks, through leaf litter and finally, into cavities in the rocks where it can.

Remember to pot the plant in a container which holds the roots comfortably. I prefer squat black plastic pots. Terracotta pots, as well as being expensive, build up salt deposits within clay and break when you drop them. When repotting plants in plastic pots, little damage is done to the succulent root system while those growing in terracotta are notorious for sticking onto the pot and thus breaking when being repotted, hence setting the plant back. For large plants in large pots it may be necessary to crock the pot with large river pebbles or large chunks of *Casuarina* bark.

You will notice that I do not use charcoal or sandstone. Charcoal tends to build up salts, whether you use fertiliser or not, after a short period of time. We use pebbles in our mix instead of charcoal for the following reasons: (a) they do not build up salts — which leads to root rot; (b) they do not break down — which means they are re-useable; (c) it is natural and cheaper than charcoal; (d) pebbles help to keep the roots cool in Summer and (e) help keep plants firm in



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*S. hartmannii* form from Numinbah Valley, Queensland. Note dark centre of flower.



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their pots and pots are less likely to blow over in the wind. The main disadvantage of pebbles is their weight. This is particularly noticed when carrying a tray of plants to an orchid meeting! Sandstone is not used as it tends to be a 'blotter' for water and thus stays wet, rotting the roots. The question is, then, why in any event do growers use charcoal? How often do you see epiphytic or lithophytic orchids growing naturally on or in charcoal? I know I have not! Or at least — not live plants!

It is saddening to know that this species — along with *Sarcochilus ceciliae*, *Sarcochilus fitzgeraldii* and so many of our native orchids are rapidly disappearing from the wild. While commercial collectors and other orchid enthusiasts have done most of the damage, noxious weeds are also accounting for a large number of the plants. One usually has to walk for hours these days before finding extensive colonies of this delightful orchid. In the Numinbah Valley I have seen rock faces of this orchid wiped out by a variety of noxious weeds — including mist flower, crofton weed and lantana, which smother the plants and starves them of light and fresh air.

Hopefully, collecting random plants from the bush will be minimised due to the efforts being made with line breeding of *Sarcochilus hartmannii* and the other lithophytic species. Selected, outstanding and vigorous clones are used and the resultant seedlings would, most of the time, be far superior to any bush collected clone. These seedlings are now becoming more readily available and grow into nice plants very quickly, flowering only a few years from the flask. Selfings and sibling crosses of good clones should always be encouraged.

It should be remembered that *Sarcochilus* species — like all native orchids — are protected plants and should not be collected from the wild. In most cases better quality plants can be obtained from people who specialise in this field. The increased proliferation of selfings and sibling crosses should help to take the strain off the plants in the wild. The unfortunate thing is that once an area is stripped of a certain species, it is unlikely to ever reappear there.

While *Sarcochilus hartmannii* is easy to grow, a lot of epiphytic *Sarcochilus* species are very difficult to cultivate. These are definitely best left in their natural habitat where they can grow and flower and reproduce and flourish so future generations can derive pleasure from seeing some of Australia's great orchids in the wild ●

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## ADVERTISERS SUMMER ISSUE

The deadline for advertising copy is October 12.

Please get your copy in early!

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## NEW SOUTH WALES

Alstonville & District OS. SPRING. Methodist Hall, Main St, Alstonville 2/9 & 3/9.

Griffith OS. SPRING. Wade High School Hall, Poole Street, Griffith. 1/10 10am-5pm & 2/10 9am-4.30pm.

## QUEENSLAND

The Queensland OS. Changed dates and venue: Mt Cootha Auditorium 9/9 to 11/9 9am-5pm.

The Toowoomba OS. SPRING. Harristown High School Hall, South St Toowoomba 17/9 to 24/9. 8.30am — 8.30 pm.

Southport & Districts OS. SPRING. Burleigh West Shopping Centre, West Burleigh Road, Burleigh Heads. 13/10 & 14/10 8.30am-5.30pm. Saturday 15/10 8.30am-4.30pm. (set up 12/10).

## VICTORIA

C.S.A.A. SPRING. Brimbank Park, Keilor. Set up 29/9 to 2/10 5pm.

ARARAT OS Inc. SPRING. Church of Christ Hall 30/9 to 2/10.

## VICTORIA

Goulburn Valley Orchid Club. SPRING. Civic Centre, Shepparton. Sat 1/10 & Sun 2/10 10am-5pm.

Orchid Species Society of Vic Inc. SPRING. In conjunction with Bromeliad Society of Vic Inc. Repco Training Centre, 511 Church St, Richmond. 15/10 & 16/10. 10am-5pm.

Maribyrnong OS Inc. SPRING. Marie Mill Community Centre, Randall St, Maribyrnong. 8/10 & 9/10.

Horsham & District OS Inc. SPRING. Horsham High School. 24/9 10am-8pm & 25/9 10am-4pm.

## Orchid Societies TASMANIA

Tasmanian OS Inc. Sec: Mr J. F. Smith. 11 Warren Court, Howrah. Phone (002) 44 1555. 4th Mon. (Dec — 2nd Tues).

Devonport OS Inc. Sec: Trevor Lehman. 5 Stoney Rise Main Rd, Quoiba 7310. Phone 24 1055. 3rd Wed.

Launceston OS Inc. Sec: Mrs Gail Wilson. 93 George Town Rd, Newham 7248. Phone (003) 26 4128. 3rd Tues (except Dec).

Orchid Society of North Western Tasmania. Sec: Mrs Melveena Stammers. Postal Address: P.O. Box 332, Burnie, 7320. 1st Wed (except Jan).

## SOUTH AUSTRALIA

Orchid Club of South Australia Inc. Sec: Glenn Heylen. 5 Richman Ave, Prospect 5082. Phone (08) 344 4255. 1st Thurs.

Northern & Eastern Districts OS Inc. Sec: Mrs Iris Freeman. 18 Justina Place, Surrey Downs, 5126. Phone (08) 281 0257. 3rd Thurs.

Port Augusta Orchid Club Inc. Sec: J. M. Zimmermann. 130 Hurcombe Cres, Port Augusta West 5700. Phone (086) 42 5120. 4th Wed.

Riverland OS. Sec: Mr M. R. Pfeiffer. Box 484, Loxton 5333. Phone (085) 84 1439. 2nd Sun (May 3rd).

The South Australian Orchidaceous Society Inc. Sec: Mrs E. G. Shawyer. 60 Balfour St, Nailsworth 5083. Phone 344 4260. 3rd Wed.

South Coast Orchid Club of SA Inc. Sec: Mr T. D. Howard. 21 Peregrine Cres, Christies Downs 5164. Phone (08) 384 2524. 2nd Tues.

Whyalla Orchid Club Sec: S. Dennis. P.O. Box 566 Whyalla. Phone (086) 45 4731. 3rd Wed.

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# Australian Orchid Review



**SPECIAL REPORTS ON ORCHID CONFERENCES  
DURING 1988**

SUMMER 1988



# Botany Bay Orchids

## WRITE FOR OUR NEW FLASK AND MOTHER FLASK LIST

### WHITE

(Stamp addressed envelope)

- 8618 Margo 'Zuma Canyon' X Buena Flora 'Suzanne' AM/AOS  
 86541 Dtps. Orglade's Puff 'Samuel Loeb' X (Malibu Carnival X Kauai Monarch) #1  
 86582 (Dtps. Double Trouble X Dtps. Orglade's Blonde Belle) X Aubrac 'Q603'  
 \* 86626 Florida Snow 'Frank's Choice' X Spitzberg 'Krull-Smith'  
 \* 86628 Florida Snow 'Frank's Choice' X (Donna Rigg X Jimmy Hall)  
 \* 86634 Florida Snow 'Frank's Choice' X Chamonix 'Ponkan's Big White'

### WHITE/RED LIP

- 86576 Quintana Roo Dunne 'Alice' X (Dtps. Alice Loeb X Phal. Zuma Firefly) 'Poco Loco'  
 86585 Dtps. Festivity 'B' X Glad Melinda 'Poco Loco' (miniature)  
 \* 86625 Bright Lights 'Vegas' X Line Renaud 'B-32'  
 \* 86632 (Malibu Felicity X Malibu Lipstick) X Donna Sitton AM/AOS

### PINK

- 86536 Melinda Nan 'Capitola' X Scaramouche 'Galaxie' AM/RHS (Pastel pinks, spots)  
 86538 Spring Silk 'Tropical Pink' X Tungku Afzan '2nd Best' AM/AOS (Medium pink, red lip)  
 86539 Herbert Hager 'Sal Loeb' X Tungku Afzan '2nd Best' AM/AOS  
 86543 Spring Silk 'Tropical Pink' X Rosy Flora 'Poco Loco'  
 86558 Zuma Champion 'Home National' X Joline 'Lisa'  
 86562 Enchantress 'Rusk' X Lippegruss 'Rusk'  
 86600 Abendrot 'Krull-Smith' X Abendrot 'Fantastic' AM/AOS  
 \* 86615 LIPPEGRUSS (Lippstadt 'Rosy' X Abendrot 'Fantastic' AM/AOS)  
 \* 86622 In the Pink 'Sunnybrook' X Joyau 'Suzanne'  
 \* 86629 Zauberrose 'Drull-Smith' X Line Renaud 'Krull-Smith' (Pink, red lip)

### STRIPED

- 8624 Zuma Happiness 'Zuma Canyon' AM/AOS X Dtps. Orglade's Party Magic 'Zuma Canyon'  
 8642 Chickasaw 'Zuma Canyon' X (Proud America X Eva Kruze) 'Zuma Canyon'  
 86546 Zuma Chorus 'Zuma Valley' HCC/AOS X Tungku Afzan 'Poco Perfection'

### YELLOW - GREEN

- 8603 *venosa* 'Zuma Creek' X Mary Vance 'Zuma Canyon'  
 8605 Heart Beat 'Zumita' X *venosa* 'Zuma Canyon'  
 8606 Zuma Winter White 'Zuma Valley' X George Vasquez 'Green Meadow' AM/AOS  
 8649 Goldiana 'Zuma Canyon' AM/AOS X Pretty Cute 'Zuma Canyon'  
 8658 Goldiana 'Zuma' HCC/AOS X Abendrot 'Zuma Royal' (yellow-gold)  
 86529 Miami Sunrise 'Lemon Drop' X Pinwheel 'Poco Loco' HCC/AOS (yellow Stripe)  
 86553 *stuartiana* 'Sal's Choice' X Miami Sunrise 'Sunny Skies' (yellow novelty)  
 \* 86633 Florida Snow 'Frank's Choice' X Hausermann's Gold Cup 'Everlasting' (yellow-green)

### SPOTTED

- 8631 Samba 'Zuma Canyon' X (Scherzo X Joline) 'Zuma Bonita'  
 8651 Carnival 'Bonsall' AM/AOS X Summa 'Zuma Canyon' HCC/AOS  
 86531 Charisma 'Pinkie' X Glad Melinda 'Poco Loco' (miniature)  
 86532 Cassandra 'Santa Cruz' X *stuartiana* 'Sal's Choice' (miniature)  
 86588 Dtps. Alice Loeb 'Alice' X Phal. Scaramouche 'Galaxie' AM/RHS  
 \* 86609 Elise de Valec #4 X Coquinette 'Krull-Smith'  
 \* 86614 Cassandra 'Woody' X Capeline 'Krull-Smith' (miniature)  
 \* 86624 Be Glad X Elise de Valec 'The King' (miniature)

### NOVELTY

- 86530 *stuartiana* 'Larkin Valley' AM/AOS X schillerana 'Poco Loco' (spots)  
 86540 Zuma Chorus 'Zuma Valley' HCC/AOS X Scaramouche 'Galaxie' AM/RHS (miniature - spots, stripes)

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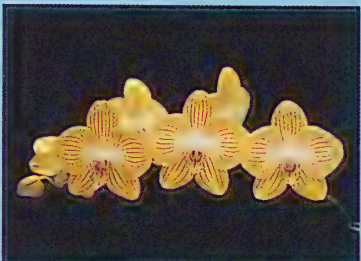
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'Zuma Canyon'



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Forward notice is given for those looking for a new standard in pink to familiarise themselves with our breeding parents *Cym* Sylvan Star 'Pink Mist' and *C.* Sylvan Star 'Pink Veil': Crosses will be offered in our November mailing list.

### MAILING LIST

Our new free mailing list is out now. If you have not received one please contact us.



*Cym.* (Winter Wonder x Gardalvin) 'Debbie'  
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## Next Issue

Humidity  
*Cym* Peter Pan as a parent  
Draculas  
*Cym suave*  
Seed capsule times.

## ADVERTISERS 6 ISSUES IN '89!

Deadline for advertising copy  
February issue is 15th  
December.

## Cover Story

*Vanda* Gordon Dillon 'Karen' <sup>HCC-AOC</sup>  
This magnificent dark purple *Vanda* with nearly black tessellations has been in the forefront on prizewinners throughout the world. Judged Champion Vandaceous Orchid at 11th AOC, Reserve Champion Orchid at Orchid Expo 88 and Champion *Vanda* at 12th WOC Japan 1987.

# Australian Orchid Review

Volume 53 — No. 4

SUMMER 1988

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*S/c. Dixie Jewels 'Suzuki'* FCC-AOS/SM-JOGA (Grower and Photographer: D. Neuendorff)

This clone is a true blood red without peer. The blooms are of classical shape and form with leather-like substance. A mature plant can flower 5-6 times per year. Dixie Jewels 'Suzuki' has a tendency to produce malformed blooms, though mainly during the warmer months of the year. This tendency appears to be cultural, with plants grown cooler being less inclined to produce malformed blooms.

## *Sophronitis* hybrids: CULTURAL OBSERVATIONS

Desmond Neuendorff



Wils. Athol Bell 'Belvedere'

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The popularity of *Sophronitis* hybrids has increased dramatically in recent years. They are great space-savers and reward growers with multiple flowerings per year in a wide range of colours from blood red through flame orange and yellow to more traditional colours.

Despite their obvious attraction, many orchid enthusiasts are hesitant to grow *Sophronitis* hybrids. This hesitancy appears to be due to a poor understanding of the cultural needs of these hybrids and the perceived difficulty of their culture in a sub-tropical climate.

The species *Sophronitis* significantly influences the culture of its hybrids. *Sophronitis* species mostly grow at high elevations in their native habitat where cooling breezes and abundant humidity prevail. I attempt to simulate these conditions by growing my plants low in the orchid house under 70 per cent shade during the warmer months and under 50 per cent shade (plus clear plastic) during winter.

A fine to medium potting mix is used for moisture-retention purposes, comprising 60 per cent charcoal, 30 per cent Australian fir bark and 10 per cent

perlite. This potting mix has excellent lasting qualities and promotes strong and healthy root systems. *Sphagnum* moss is used as a topping on potting media during hot dry weather. The moisture-retention qualities of the *sphagnum* moss stimulates considerable root activity.

In addition to my normal watering programme, all *Sophronitis* hybrids are misted each morning during the warmer months and at various times throughout the day during hot dry periods. Oscillating fans are used to create constant air movement across the moist floor of the orchid house. The general aim is to grow my *Sophronitis* hybrids under cooler and moister conditions than that required for standard cattleyas.

A word of caution: not all *Sophronitis* hybrids prefer constantly moist conditions. For example, the Hazel Boyds and Rosemary Clooney 'Nanae' thrives under drier growing conditions because of the more direct influence of *L. flava*.

It is my experience that some *Sophronitis* hybrids grown under heated conditions during the Brisbane winter do not bloom as readily as those grown under natural temperatures. Even with





Slc. Wendy's Valentine 'June' AM-HOS/HCC-AOS  
(Grower & Photographer: D. Neuendorff)

This bright red clone is of easy culture, with multiple flowering per year being the norm. Unlike many *Sophronitis* hybrids, Wendy's Valentine 'June' has good flower stem length, but is inclined to reflexing of the dorsal and lateral sepals.



Slc. Tangerine Jewel 'VT' HCC-AOS  
(Grower and Photographer: D. Neuendorff)

This clone is a superb miniature which has the desirable trait of blooming as new growths mature. This means blooms throughout the year. It is a willing stud plant, but hybridisers must attempt to breed out the narrow labellum which is characteristic of *Sophronitis* hybrids.

good air circulation under heated conditions, clones from the Hazel Boyd grex have been reluctant to develop flower spikes and, when they do, tend to drop buds. While standard cattleyas thrive under heated conditions (minimum 14°C) during winter, I now grow all my *Sophronitis* hybrids under heated conditions in an orchid house with the south west walls covered with solarweave. The roof is covered with clear plastic to provide higher light levels during the winter months.

My *Sophronitis* hybrids are fertilised twice per week throughout the year with

half-strength liquid fertiliser. A high nitrogen fertiliser is used during the growth cycle and a high potassium fertiliser when growths are reaching maturity. Ten grams of iron chelate and 15 grams of magnesium sulphate are added to each 40 litres of fertiliser solution. Apart from liquid fertiliser, a half-strength osmocote programme is also used on all *Sophronitis* hybrids. Pots are flushed weekly to prevent a build-up of excess salts. This fertiliser programme has produced robust flowering-size plants from flask in under three years ●

#### HONORARY EDITOR:

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# ORCHIDS ARE WONDERFUL LET'S MAKE MORE USE OF THEM

Jean Slattery

One may say that Floral decoration is as old as civilisation itself. Ever since the early days, man has always enjoyed the beauty of nature. A search of our earliest beginnings reveal the use of flowers and vases of cut flowers decorating the home, or presented as offerings to the Gods.

The ancient Egyptians decorated with cut flowers placed in vases. Many wall paintings and bas-reliefs in Egyptian tombs illustrate the vases and even the types of flowers that were used. These records can be traced back to about 2500 B.C. Flower arranging is an ancient art, occupying a place with painting, mosaic, sculpture and architecture.

As we learn of the early history of Greece and Rome there is little evidence that they used cut flowers as decoration for their homes. Flowers did play an important part in their lives, but wreaths and garlands were the popular decorations and the garland makers were the flower arrangers of their day.

In the Vatican Museum is a world famous Roman mosaic, The Basket of Flowers. It is said to date from the beginning of the second century A.D., and it shows a grouping of mixed flowers.

A visit to any museum of art will reveal how consistently flowers have been used as a decoration for the home. Famous ladies were portrayed with a vase of flowers on a nearby table or mantle. Family portraits included arrangements of flowers in the background. Customs of different periods come to light as shown in old paintings, and we learn of the old English custom of filling the fireplace with flowers during the months when heat is unnecessary.

The history of the introduction of various flowers, as well as different types of vases and containers may be traced down through the ages as pictured in

paintings. The changing styles or fashion of flower arranging can be carefully studied as it progressed with our civilisation.

During the Victorian period, flower arranging followed the trend of the times and elaborate bouquets of masses of every kind of flower were assembled in one vase. Usually the container was a type of urn which was highly decorated.

The oriental flower arranging, dating back to the early 600 A.D. Ancient Chinese scrolls illustrate arrangements that today is studied in our modern flower arrangements. Chinese folklore concerning flowers is an interesting and complex study. The Chinese looked upon the orchid as the emblem of love and beauty. The miniature cymbidium species can be recognised as pictured on old oriental scrolls.

The Chinese use of flowers can be described as restrained but never stylised. They are exquisite in their elimination of extraneous detail and in their simplification. Their working out of space relationships is used as inspiration and guide in our modern designs. This refined taste in flower arranging was passed on to Japan, along with Buddhism, and developed into the highly symbolic art of Japanese flower arranging.

A system of arranging flowers was developed by the priests and was furthered by the symbolic lore associated with flowers. The system developed was highly stylised and formal. Later a simpler and less complicated style of arrangement evolved which is based on the use of three main lines which is known as "heaven", "earth" and "man".

There have been many times in Japan's History when the emphasis on actively militaristic pursuits has seemed to



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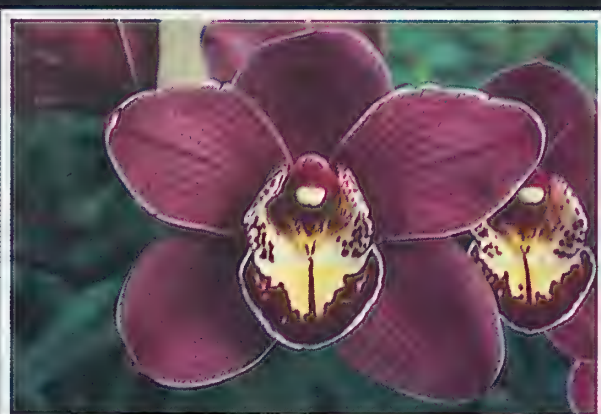
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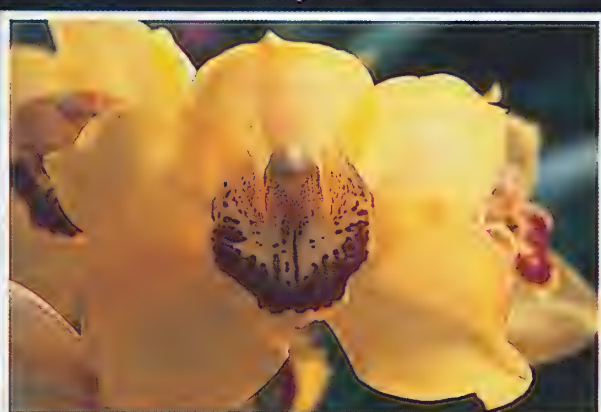
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dominate their civilisation. However, a philosophic state of mind and a reverence for nature enabled the priests, the nobility and the warriors to find tranquility of mind and relief from life's tensions in the handling and observation of flowers.

Enthusiasm for flower arrangement developed very rapidly in nineteenth century America where interest in cut flowers and pot plants grew apace. Over the years America developed the art of flower arrangement to a standard and diversity that has absorbed all that is best of the European designs, and in addition has taken from the Far East the principle of using line and space within the design fusing both elements into a new and distinctive style. With brilliance the American arranger has widened the possibilities of new forms and stimulating shapes and has created a form of expression that is unique. Arrangers of all countries including Australia are increasingly enjoying gaining knowledge

and experience in period design prompted by a desire to interpret the feeling and spirit of a great era.

During the Twentieth century fashions in flowers, like womens' fashions change with the times orchids became more popular, people have become aware of the beauty and the long lasting of the orchid flowers in arrangements. We grow our orchids with the greatest of care, only to have the flowers left on the plants, or an occasional blossom made into a corsage, or for a special occasion a spike or two will be cut to decorate our home.

To the floral designer, orchid blooms excite the imagination, incite the desire to create beauty, and invite the spirit of adventure. Though the study of floral art through the ages is fascinating, and knowledge of it brings aesthetic appreciation and understanding of modern design. "Orchids are wonderful — let's make more use of them". If you grow orchids — use them, enjoy them. Orchids have distinctive colours and excellent keeping



qualities which make them wonderful for arrangements. Orchids in arrangements follow the same design and principals that apply to other flowers. You can mix the genera as long as the colours are compatible, just be sure that all blooms are placed right side up, because the strong lines formed by the prominent lip must follow the main line of your design. Colour gradation is easier with orchids than with flowers of any other family. Their unusual qualities add greatly to the most usual settings and give distinction to your decor. To give them your own interpretation, adapt the design to the orchids and the background materials that you have available.

### Preparing the cut orchids:

The lasting qualities of your cut orchids can be increased by correctly processing the flowers. With a diagonal cut of a sharp knife or razor blade cut your orchids in the morning before strong sunlight had hit them.

Never use scissors or clippers which crush the cells and prevent proper conduction of water. Place the stems in a jar of fairly warm water, being sure that the flowers are not crowded or bruised, and place the container in a cool location for three or four hours before use. The orchids will take up a surprising quantity of water and their texture will be

improved during this processing. The use of certain chemicals for extending the life of the cut orchids are not conclusive, but such things as aspirin, sugar, copper sulphate and formalar 20, have been used with varying success.

The use of your orchid blooms are many, and your own ingenuity can extend the possibilities far beyond the brief indications as follows. Our first thoughts on the use of orchid flowers most naturally focus on orchids for personal adornment. The simplest use of a single orchid flower, miniature Cymbidium, Cymbidium, Oncidium, Novelty Cattleyas, Dendrobiums and our Australian Native orchids, Phalaenopsis are only a few which when carefully wired and assembled make attractive Boutonnieres.

**Corsage and shoulder spray:** Originally the corsage was a bouquet for women to wear at the waist, or "corsage" of the dress, but the term is used more flexibly to apply to a made-up flower worn in various manners.

More elaborate than flowers for the button-hole, it consists of one or more orchids and generally contains greenery and/or ribbon to complement the orchids. The mechanics of corsage construction are relatively simple. Lightness and sturdiness are of prime importance. At all times when making the shoulder sprays, corsages, or any other floral

designs (wired) one should keep the design as light as possible.

**Living Jewel:** Tiny, delicate orchids make stunning — and style-setting — living jewellery as earrings, brooches, pins and such. Using florist glue the orchids are glued directly to the earring base or to any type of base used for costume jewellery. Orchids may be attached with wire, to a comb as a hair ornament. An orchid spray attached to a handbag or attached to a hair clip and then clipped to the side of your shoe is a nice idea for a bridesmaid or for the bride's mother to wear on her shoe.

Wristlets of orchids can be made by taping small orchids to a wired wristlet shape or attached to the wrist with ribbon.

Necklaces of orchids can be made on wire, ribbon, gold braid either completely encircling the neck or grouped in a design at the neck line.

An inexpensive strand of artificial pearls can be enhanced by attaching a small spray or a single orchid such as a Vanda or a Phalaenopsis near the centre.

**Hair Sprays:** A single bloom of a Phalaenopsis, Vanda or similar flat orchid can be worn on the simplest or most sophisticated coiffure, the problem of fastening the arrangement in the hair is simplified if one loops several of the wired orchid stem ends into small circles to accommodate bobby-pins.



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### Orchid Arrangements

Orchid arrangements, using several flowers with or without accessories or several sprays of orchids, require more time and effort but the end result will be worth it.

Choose such orchids as Cymbidiums, Paphiopedilums, Odontoglossums, Dendrobiums, Phalaenopsis, Vandas, Oncidiums, Cattleyas, Epidendrums, Calanthes, Aerides, Angraecums, Coelogynes, Dendrobium Kingianum and many others. Orchids are suitable for all types of arrangements as over the years certain styles have become classic like the Western Mass Arrangement in flowing style, with its rich variety and colour. Modern arrangements are now many and varied with new styles that keep evolving from the old.

Flower arranging is embracing new ideas and attitudes compatible to contemporary living. Contemporary styles, sometimes called free-form, free-style, free-expression began to appear in western countries in the 1950s. They have been much influenced by Ikebana (Japanese) styles and by recent trends in architecture, art and sculpture; other reasons they became popular, they use few flowers — sometimes one or two — and this is an important consideration in an age when flowers are expensive.

Breaking away from conventional traditional designing to find fresh ways of communicating ideas, the arranger experiments more freely with plant material. So designs today show more diversity and no longer follow set patterns alone. They can vary from precise geometrical shapes to the free-form. Some are more expressive in character and some are designed for a purely decorative effect. Simplicity and clarity with a purity of form is popular, clever massing of material for bold accents of texture and colour is also popular, this effect is often accented by modern containers, with attractive glazings, colours and interesting form.

Interpretative arrangements in the 1930s and even later, a later stage of development was for floral arranging



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titles to be given to certain classes of flower arrangements, such as interpretive designs that is to make the designs not only decorative but also expressive.

The soundest piece of advice that can be offered to the interpretative arranger is: "the plant material should tell the story". There is, unfortunately, a tendency in present-day show work to rely on accessories to do the work that the plant material itself should be doing.

The arranger should be discriminating, with good taste and of course, abiding by the fundamental principles of design.

Modern design is most popular and includes free-form, abstract and all the various extensions implying a swing from the familiar basic shapes to the more original styles, with no set pattern or formula. Free form is generally taken to mean a style with no precise geometric shape, it breaks away from stiff, rigid, conventional patterns to arrangements with a more fluid and flexible outline dictated by the nature of the material used.

Mobile, stabile, stamobile, collage and freestanding and some creative designs are further extensions of modern designs. However they are terms for method of assembling rather than distinct styles, in which artistry and skill can be further, exercised to result in more permanent designs.

### **Living Designs:**

Using your orchids in the containers they grow in: A pot of *Dendrobium kingianum* in a colourful container placed on a glass mirror. At each side place a candle in a small holder.

A miniature orchid in a suitable ceramic or Japanese pot looks lovely with a Japanese or Chinese figurine placed beside it, on a small table or centrepiece.

Specimen pot: *Paph. insigne* or *Paph. fairianum* with many flowers looks stunning amongst some weathered wood or lapidary with an imitation crane bird-like figurine.

**Orchids with driftwood:** The plants put into plastic bags and situated between the driftwood with a few other house plants makes a gracious decoration in your home and lasts longer than cutting your orchids — try it.

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## Rainforest Poems

Edwin Wilson

Dedicated to "Mac" Miss K. M. McIlraith, Banora Point, aged 90 years.

Introduction to an illustrated book of poems entitled *Songs of the Forest* published by Hale and Iremonger in Summer 1988.

The rainforests of my childhood, in the far north coast of New South Wales — with their wild vines, wait-a-whiles, corky lianes, epiphytes, palms, ferns, strangler figs, stinging trees, ticks, leeches and snakes — have been a source of pain and inspiration to me all my life.

I grew up in the shadow of the 'Big Scrub' — the largest stand of tall, sub-tropical rainforest in Australia — that'd covered the basaltic hills from Lismore to the coast.

Ex-convicts, ship's deserters, adventurers, and other reprobates came for the 'red gold' of the cedar trees. Later, when the land was selected and cleared for farming most of the wood was just burnt — thus the 'black stumps' and the name of the town 'Woodburn' — and the fact that great grandfather helped fell the jungle scrub beside the Richmond river at Wardell to build a slab hut, has heightened my sense of loss and guilt.

Initially I was captivated by the nectar-sipping parrots that screeched and tumbled in the trees, and the rosellas that made their nests in the remnant hollow stumps — the stubble of the forest.

I built an aviary and caught rosellas with fishing line snares around a cob of corn attached to a Y-shaped piece of wood in the back yard.

One day I caught a female eastern rosella and her brighter coloured mate pined and threw himself repeatedly upon the wire. In the morning he lay stiff and cold on the ground.

With an uncharacteristic squeamishness for a farmer's son I thought of baby rosellas starving in some hollow log. So I took my little hatchet and opened a hole in the side of the cage and let my birds free. Such beauty should not have been contained.

I'd grow orchids instead.

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As a barefoot child at Mullumbimby, from the wrong side of the tracks, I knew the back lanes of the town as my own hand. Sometimes I'd stand on the crossbar of my old bike to look over the fence at the orchid collection of the local bus driver, and I saw a mottled light fall on

pastel racemes and whorls — and I was at peace with nature or God, and the world.

I hadn't spoken to God after my father died. This event, more than any other, drastically altered my life. Instead of working the land and planting row after row of sugar cane the farm-boy became a townie and grew up beside a little mountain beside a tidal creek, within a span of human memory that stretched back to the pioneers, the bullock drivers, the aborigines, and the forest.

Then a new Chemist came to town and placed flowering orchids in his shop window. My heart soared on a Monday morning on the way to school and my bike flowed with an unexpected ease — like the high that joggers get beyond the wall of pain, when some new opiate is generated in their brain — feet dancing with the stars.

These fence-and-kerbside-revelations were long-established rituals, before I made contact with the orchids in the bush. It's interesting for me now to contemplate that orchids — being monocotyledons and related to the grasses, have stems not unlike sugar cane — but that may well be drawing a long bow.

One morning the Chemist placed a yellow soft-cane Indo/Malayan *Dendrobium* in his window, where previously he'd shown *Cymbidiums* or *Cattleyas*, and it was one of the most beautiful things I'd ever seen.

A friend at school lived on a dairy farm and he said such 'lilies' grew in the scrub on his father's property, where the cleared land met the forest. We planned an excursion in the Science Laboratory, instead of listening to what was being said about air and fire, and earth and water. They didn't teach Botany in those days, at least not to the boys.

It wasn't quite on the same scale as Hooker's expedition to the Himalayas that showered the *Rhododendron* on an unsuspecting west. What we found were called *Dendrobiums*, which at least had the word "tree" in common — *Dendrobium speciosum*, or 'Rock Lily' (or 'King Orchid' as they were called in Queensland) — not lilies but orchids, if slightly less showy than their Asian cousins.

The flowers of the rock lilies were smaller than the yellow softcane that'd been in the window, and mostly white,

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## ACKNOWLEDGEMENT

Our apologies to Mr Syd Bachelor for the omission of his name as author of the article titled Australian Native Dendrobiums from flask to flowering published in the A.O.R. Spring 1988 issue. We regret the oversight.





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and half-open, and hanging down — so as not to properly show their pretty faces and projecting lips — the landing pads for pollinating insects.

We ripped our joyful trophies from the yielding rock and bark as scalps from skulls, and hung them in our belts as we rode home.

I nailed my dripping conquests to the pailing fence down the side of the house and built a projecting wire frame and cardboard shelter to protect them from the spoiling sun. They thrived and were as friends or pets — with all the happy memories associated with their discovery and collection.

After the rock lilies there'd been 'button' and 'pencil' orchids, and the 'pink rock lily', *Dendrobium kingianum* — not to be confused with the 'King' orchid.

Later I moved the collection under a camphor laurel seedling that'd come up in the chook pen, after its smooth-green bark had become a flaky anchor for the grateful roots.

Phase three was a shanty built against the fence with old palings and other scraps of wood. Under the picket canopy of this rickey new home, the light was filtered and the humidity increased by reducing the drinking wind.

This 'bush house' was no higher than the fence and I had to squat inside so as not to hit my head. It was my retreat, and bower, and my patch — and the grass was worn smooth near the door by the constant access and egress.

It was a retreat from parental pressures to get a job and earn money, and not eat too much, and from my own ambition to do well at school, and the grinding need for study.

It was also a bower to my growing sexuality, for the collecting instinct is a sexual sublimation and a seeking after influence, and is related to insecurity — for why else would the poor-little-rich-girl Imelda Marcos need 1,000 pairs of shoes? So I collected the epiphytic ferns and orchids from the virgin forest as icons of beauty, love tokens, and objects of

desire — when no one could tell me what these urges were. Flowers, the blatant genitals of plants, were part of a race memory of life itself — with images of naked women in the bush — and I lusted after their acquisition long before I knew their names. In a house without books I learnt by observing nature, and it transpired that the word 'orchid' was 'testicle' in the ancient Greek.

\*\*\*

Delicate cream, pink, and white blooms, heavy with nectar, opened their lovely limbs to me each spring, their stigmas wet to a chance of passing love on the wind or wing.

And each morning in the Summer I watered my plants before I went to school, and filled my temple with the moist cool smells of the forest, and this was almost paradise on earth — where the new religion was Ecology — and the rainforest its cathedral.

It'd always seemed to me that running water be a mandatory adjunct to 'paradise', so 'rainforest' almost by definition, fulfilled that condition. The word 'paradise' is of Persian origin, and given the climate of the Middle East, and the necessity of water to all life, then this makes sense.

Paradise is described in the Koran as having gardens of delight, and rivers flowing with wine, and unforbidden fruit, and naked Houris with large dark eyes reclining on leafy couches.

After this the Christian concept of heaven was far less appealing.

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As part of a fund-raising venture for the local school I was contracted to help grub out a stump at the retired doctor's place — an exotic weed that'd grown too big, too soon, too close to the house — and had to be put down.

It was a gracious old home with a conservatory down one side, and after the job I was offered a cool drink.

Growing under glass with various ferns and other spotty things was a solitary

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flowering orchid in a hanging pot — a can-can of dancing ladies throwing their dresses up over their knees. The old doctor was kind to me and told me its name and where it came from in two words — 'Cocktown Orchid'.

The 'Cocktown Orchid' or 'Cookie' — later to become the floral emblem of Queensland even though it extended at least to the Aru Islands — growing at virtually the extreme edge of its 'outside' climatic range — was an attainable, hard-cane Australian dream.

Later, its almost blood-red Eurasian hybrids, that's been selectively bred by man to look more and more like the dinner plates of some last supper, were used by Thai Airlines to advertise exotic places inhabited by dark-eyed maidens with honey skin.

One of the earliest of these darker hybrids I ever saw was called 'Bali' — with its evocations of sensuality and the sweep of islands — that last refuge of the wallaby and possum before the wide deep Strait of Lombok, Wallace's Line, and elephants and tigers — and the tourist invasion.

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It's understandable that the pioneers saw the bush as the enemy that had to be subdued for their own survival. I too was imbued with this mentality, and under different circumstances and employment could easily have grown up to be a 'redneck'.

The first thing I ever bought for myself in a shop, aged about 8 years, was a little axe — an expression of the frontier spirit — where a boy wasn't a man until he'd had his first woman and cut down a tree.

Gradually the bush had been violated by the axe and later the chain-saw and now the forest didn't have a chance — for the greatest bounty came from the greatest destruction.

And the best orchid pickings were to be had at the sawmill. Crushed box orchids were rescued from the piles of logs at the mill, and spider orchids, with the strange four-cornered stems grew on dappled,

moss-encrusted and buttressed columns, that's recently supported the canopy.

\*\*\*

Step-father was a cabinet maker and joiner who worked with Christ's honest medium of wood and saw trees in terms of super-fee of timber. Despite this he wasn't immune to their beauty and understood the forest was diminishing.

As a child I thought the jungle-scrub went on forever, like the Tardis, and grew back immediately like the 'Magic Puddin'', but of course it didn't.

I had to leave and come back again to see the light — when it was apparent that the remaining forest was a limited, finite, and precious biological resource. So I traded in my axe for a quill (later to be replaced by a biro and typewriter) and became a 'Godless Greenie' — while still retaining an orchid collection as a link with my own rapacious childhood.

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Of course there were many who'd previously been moved by the forest, where others saw only wilderness and thorns.

Some who were closest to the cutting-edge were the first to call for a holding back. The timber-getters who cleared the Big Scrub were the first white men to fall for its beauty — already too late, for most of them were shy, inarticulate men who eased the pain with grog and oaths — which hardly helped the forest.

William Guilfoyle, the renowned landscaping Director of the Melbourne Botanic Gardens saw the staghorn ferns, *Platynerium superbum*, in the Tweed Valley in his youth.

Many years later this influence was to surface in his famous 'The Temple of the Winds'.

The 'rock lily', *Dendrobium speciosum*, also inspired the surveyor R. D. Fitzgerald (grandfather of the poet) to spend his days transcribing lines on stone (before the days of colour snaps) so all the world could know of his transfiguration by a lithophyte.

\*\*\*

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I'd been led by orchids to science and ultimately to Botany at University. But Botany was rather clinical and far removed from the exhilaration and secret joy of discovery, and the thrill of penetration of the forest.

One day in the laboratory during M.Sc. qualifying Plant Physiology, they had the audacity to use plastic beads instead of real dirt. I knew then I couldn't be a scientist — I'd had enough.

My interest in plants was more to do with aesthetics. They could separate the components of a flower's fragrance but how could that ever approximate the first wild rush of spring as an orchid pumped its urgent need into the forest? Beauty couldn't be dissected and quantified and measured in a mass spectroscop.

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When we left Mullumbimby for Tweed Heads in 1959, so my step-father could obtain work, it was as if we'd been expelled from the Garden of Eden. I knew eventually I'd have to leave to work and grow; but that premature departure was exceedingly painful.

A subsequent friendship with Don Faulkner and Miss K. M. McIlraith (Mac), retired schoolteacher and orchid grower of Banora Point, helped me interpret the forest, after having eaten of the fruit of the tree of knowledge.

When I came to Sydney on my own to

work, aged nineteen, I carried an idealized landscape of childhood in my mind, and my heart ached for those green hills.

Many years of urban exile followed, with a stint in New England.

Then just after I started work at The Australian Museum, a colleague Maude Tyler, who was to become a friend, brought in a bouquet of yellow Indian *Dendrobiums* as a farewell present to the departing Deputy Director, Elizabeth Pope. My heart was bruised by an avalanche of memories.

I'd grow orchids again.

So in the fourth decade of my life I built another temple to the forest (in the backyard of the block of units where I lived, in the literal shadow of the approaches to the Sydney Harbour Bridge) and was re-introduced to the habit of the daily service — the prayer and ritual to root and sheath — to watering, potting, and fertilizing, like some pseudo-copulation with a cattleya as the Ichneumonid wasp.

I'd found an inner peace again, a core of continuity with the forest and a link with childhood in a world of change — a mass, a nucleus, and a deeper understanding of the one great law of life — that that which gives us the greatest pleasure can also cause us the greatest pain.

When I moved to suburbia it was inevitable I'd build a better glasshouse — a seeking after harmony in the heartland of materialism — where the bottom line at every dinner party was the state of real estate.

The next move, to the Botanic Garden — the closest thing to a rainforest in the city — seemed natural in retrospect. But nothing is ever quite so simple. The pathway need not have led there at all, and I still had to work hard at being lucky.

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The expedition to Cape York Peninsula in 1982, with seed collector Peter Hind, conducted in my own time and at my own expense, was to be much more than a busman's holiday.

Far north Queensland had always had a lodestone pull on me, enticing me to make the necessary pilgrimage of the true-believer to the source — my Mecca and Jerusalem — and a symbolic expression of this passion was to see Cooktown orchids flowering in the wild.

I'd been there some 20 years before, and had travelled to Cooktown when it really was a cowboy town with Alex (A. W.) Dockrill (of *Australian Indigenous Orchids*) — but at the wrong time of the year.

\*\*\*

We spent a night with my mother's brother who had a nursery in Brisbane. Uncle Jack went to Cape York during the war and brought back orchids to grow in

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grandfather's pergola in Lismore. So somewhere in the backyard of my mind were latent memories — subliminal signals, just waiting to be triggered by perfume or orchid purple.

The little scrubby hills and valleys on the road to Cooktown had long since been combed of 'cookies'. We had to go further north, past giant magnetic termite mounds arranged in rows, like graves, or neolithic stones — some vast mudhenge arranged to unknown gods.

My first flowering 'cookie' was in a vine thicket off the main road beside a little creek — the pale lavender being such a contrast to the prevailing grey-green. At this first blood I gave a whoop of joy — that such thin spindly stems could contain such lovely blooms.

There were young seedlings and adult plants growing all over the rocks and trees and hanging like monkeys from the vines, and most of them were in flower.

It was a high point of a lifetime.

In a fit of pious self-righteousness I decided to take only photographs, and clambered over the rocks in an attempt to find the best position.

At this point I had a profound feeling of unease that started and my ankles and moved up my legs as a pins-and-needles sensation to my thighs, but I was far too pre-occupied to identify the problem. When I looked down I discovered I'd been standing on an ant's nest. Battalions of green tree ants were swarming all over my trousers and up my legs, and as I tried to brush them away I fell off the rock on which I'd been standing, and nearly broke the camera.

After the ants had been removed and before we left that sacred site we went back to self-pollinate as many flowers as we could. This was a more recent evolutionary adaptation of orchids — that man should be so moved by their plight and beauty to become their pollinator.

In most cases the pollen was not in the flowers as it was towards the end of the season. The pollen robbers had been at work without effecting contact with the stigma.

A closer inspection of most flowers revealed a resident spider, looking for the world like a petal, just waiting to strike, like AIDS, only more sudden, crouching in the very temple of delight, and ready to pounce. Some poor unsuspecting gnat or fly, wanting to make love to this flower, would've become a spider's lunch.

That was the problem with paradise — the exquisite beauty and luxuriant excess of plant growth was matched at every point with violent death, decay, and disease — by snakes, spiders, green tree ants; and ticks that carried scrub typhus; and mites, and thorns and prickles; stinging trees and bunched spear grass; gnats and flies; mosquitoes, malaria,



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dysentery; and jungle sores, and ulcers. Luckily, to date, I'd only been bitten by the orchid bug — an attenuated form of collecting mania — and not to be confused with the orchid beetle.

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Botany, like self-knowledge, can sometimes be a dangerous business too.

The Botanist William Carron — who later worked as 'collector' at the Sydney Botanic Garden — went on the Kennedy expedition to Cape York in 1848. He was left in charge of a group in the Iron Range and sat on a hill — probably Little Round Back, south of the Pascoe River and not Carron Hill as shown on the maps — and shot pigeons and parrots to try to keep alive, as his men literally died around him.

Members of the previous collecting trip up the Massey River had contracted scrub typhus and some of the could've died had they not been air-lifted out.

This time we took the extra precautions of pulling our socks up outside our jeans and plastering our necks and arms with tick-repellant cream.

Along the gallery the walking was fairly easy. Without the strong light things didn't grow so well on the forest floor — which was swept clean by the seasonal floods — the height of which could be seen by the debris trapped in the trees.

We collected orchids and other plants for the proposed new glasshouse in the Gardens.

After about three hours walking we came to a fork in the river at the beginning of the gorge country. We sat on a tree leaning out over the river, had our lunch and discussed the possibility of sleeping rough, to get into the headwaters the next day.

Then we saw the crocodile.

I'd heard crocodile stories in the pub at Coen but hadn't expected to see one so far into the freshwater.

My initial reaction was curiosity. I peered around the corner to get a better look. There was a massive tail on a sand bar, about eight feet long and about a foot thick (where the vegetation cut my vision) about fifty yards from where we were standing — and I hadn't even seen the back legs!

I'd seen a stuffed crocodile at the Mullumbimby Show and at the Museum, but they weren't a patch on this one!

As I fumbled for my camera the crocodile moved, which was hardly the appropriate word — as it all happened so quickly.

With a flick of its tail the beast was crashing through the undergrowth towards us. I literally ran for my life, leading the retreat as I crashed through the vines beside the river where the light came in. I wasn't sure how long we ran before we both stopped to listen — when

the only noises I could hear were from the river and my heart.

The silence terrified me and my legs were weak, but I wouldn't sit down for fear that something would race up and chop me off at the knees. So we climbed a tree to catch our breath, and then we kept on walking.

I'd only seen the tail and that was sufficient to kindle the dark and primitive fear of predation in my marrow, so many generations from the cave man. It was as if I'd seen a dinosaur, and a carnivorous one at that! It wasn't hard to imagine the tail curving up into the body and head of a *Tyrannosaurus rex*, with all those pointy teeth coming at me, mouth open, ready to crush my bones. It didn't matter in the least that man had evolved on earth long after the dinosaurs became extinct — for the crocodiles had overlapped them both — and the fear was imprinted in my genes.

Where before the rainforest had looked mysterious and beautiful it now looked malevolent and evil. And now the sun was at a lower angle in the sky and as we were going the other way, the contorted shadows of the vines and creepers fell across our path, and every jungle noise quickened my pulse. And the river looked dark and murky — the same river I'd waded across the day before when we'd bogged the car.

The blazemarks on the trees were my only consolation. They stood out like reflecting discs besides the highway at night, the sun behind me — and were taking me home. And how I yearned for the mild and temperate zone, for everything here, even the angle of the sun in the sky each day, was wrong.

Next day, on the way south, we stopped to climb another hill, with a dry-rainforest thicket on its sheltered side. I hadn't slept so well the night before. Now, in the forest, I was disoriented and afraid — expecting to see a crocodile jump out at me from behind almost every rock and tree.

And then there were splashes of lilac in the trees again, and the higher up the mountain we went the lower they came — until epiphytes became lithophytes — with sprays all arching in autumn homage to the sun.

\*\*\*

When we went along the logging road into a high country of the Mount Windsor Tableland, the fear of crocodiles subsided.

They were logging in the plateau for kauri on the western side but a large area of virgin rainforest remained.

Carron's journal has frequent references to days spent 'cutting their way through scrub'.

The Kennedy expedition would've cut its way through jungle like this, losing



their sheep and horses and carts between boulders, or in deep ravines.

In a hut in a clearing on the top of Mount Lewis I decided I had to do it. After the 'cookies' and 'crops' I'd come back to Sydney and publish *Banyan*, my first collection of poetry in the process of becoming — my own anthology, my 'collection of flowers' — before I died.

\*\*\*

The long drive home, from latitude 13° to 35°, from the tropics and the changing regimes of the sun to a Sydney winter, was made even more remarkable by the fact that it was all in the one continent and country.

We drove back quickly, in as straight a line as possible through central Queensland and New South Wales, from dust and flies and crocodiles to a Tamworth frost, from rampant jungles to rampant capitalism.

The city has more in common with the jungle than we'd usually care to admit — with its predatory motor cars, and high-rise air-conditioned termite mounds, and strangler mortgages, and clinging wives, and easy-rider epiphytic families — all struggling for the light.

The trouble with urban man is that he's lost contact with his roots and the raw sustaining power of the sun — and with air and water, and the source of all food, the earth itself. That's why we have to go

back to the forest sometimes, to know who we really are.

Of course all conservationists are hypocrites to a greater or lesser extent, in terms of their use of wood and wood products.

Rainforests however, those last 'Noah's Arks' of plants and animals, those last remaining reservoirs of genetic diversity, must be preserved at all costs if this great cargo of species is to be saved from extinction.

Rainforests have been the origin of many of our food crops and pharmaceuticals, and some plants out there haven't even been named, let alone studied for their potential usefulness to man. For this reason alone the little that is left must be preserved as a 'gene pool' for future generations, in a world of monocultures. Surely Australia is still a rich enough country to be able to afford such a luxury.

And there may be another reason why middle-class urban Anglo/Celts and numbers men have discovered an affinity for rainforests in the straw-buff land of ours — apart from the votes — and that's because they're green!

\*\*\*

At the time of European settlement only about one per cent of New South Wales was rainforest. The forest, which had been there for millenia, was virtually

destroyed for gain in less than 100 years. Now, 200 years later, less than a quarter remains, and about half that has been affected by logging.

One of the problems has been that rainforest trees take hundreds of years to come to maturity. Few politicians dare to think in that time scale as they won't be around to take the credit.

Governments should create jobs in weed eradication and rainforest regeneration to employ those who've been displaced because of the cessation of logging. At the rate the forests were being destroyed they'd all have been out of jobs in 10 years anyhow.

The investment in beauty, diversity, employment, tourism, and the future was almost too late.

\*\*\*

Poems for *Songs of the Forest* have been selected from *Banyan* (1982) and *The Dragon Tree* (1985), both published by Woodbine Press with pencil drawings by Elizabeth McAlpine, as well as more 'songs of the forest' written since that time ●

Collections of *Banyan* or *The Dragon Tree* may be obtained from Woodbine Press, P.O. Box 32 Lane Cove, NSW 2066, at \$10 softcover, \$20 hardback each.

Edwin Wilson is Public Relations Officer at the Royal Botanic Gardens, Sydney.

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# From Salty Surprise to Spiking Success

During the month of October 1987 Melbourne experienced a bout of very hot weather. The mercury climbed above 30°C over several days. Throughout this hot dry spell and into November, my Cymbidiums continued to receive their usual morning dose of water and seemed to survive well.

In November however, it was clear that a serious problem had arisen. The bulbs of several plants repotted in September 1987 had shrivelled considerably. In addition, brownish-black, irregular or scallop-shaped marginal scorch marks began to appear in increasing number along the length of the leaves. Roughly oval-shaped scorch marks, preceded by water-soaked patches, also appeared mainly between the leaf margins. Leaf tip burn became more frequent and grew down towards the base of the leaves. The photograph below illustrates the damage.

A recently divided plant suffered severe leaf drop on two divisions, and two-thirds of the bulbs died.

Suddenly the proverbial penny dropped as white salt deposits became glaringly apparent around the drainage holes of the

affected pots. At the same time a fine white encrustation of salts appeared on the surface of the pine bark potting mixture (75% pine bark + 25% styrene foam). These symptoms were similar to those which occur generally on potted ornamental plants subjected to excessive salting (Peveill and Lee, 1979).

A few pots which had been sown with orchid seed from previous crossings, did not exhibit these symptoms. These pots had not been top dressed with solid fertiliser and had only received an occasional liquid feed in the spring of 1987. Their speed fertiliser treatment was the reason why they had not salted up.

It was also noticeable that of two shade-houses covered with 50% shadecloth, salting effects were worse in the one that consistently gets more sunlight. This observation would seem to support the claim that more than 50% shade is needed in the Melbourne summer for shadehouses not overshadowed by surrounding trees or buildings (W. R. Johnson, personal communication). The Mornington Peninsula Orchid Society





# and Saving Strategies

Peter North-Coombes

(1986) advocates 75-80% shade for Cymbidiums in summer.

Some varieties, e.g. Oriental Legend 'Wild Rose' and Nonna 'Goldilocks' appeared to be unaffected by salting in November irrespective of their location. They appear to be hardy in this respect and it is only residual salting that has caused very mild scorching to develop on these varieties by the end of March 1988.

## SAVING STRATEGIES

In an attempt to rectify the salting damage, all the pots were subjected to heavy leaching to wash out excess salts as recommended by Lane (1985) and by Handrek and Black (1986a). The leaching was generally effective in reducing the increase of leaf scorch in the growing leaves. The worst affected plants however, continued to show an increase in scorch damage though this progressed at a slower rate than prior to the leaching treatment. I believe that these plants were still trying to cope with the excess salts they had taken up from previously applied fertiliser.

To prevent further salting up of the pots, the collection was watered by sprinklers each morning. In addition, they were watered by hand in the evening from early November to early March 1988. This was done whenever the maximum daily temperature reached 25°C. They were also watered in the evening if during the day, drying winds had dried the pots by evening. This was done even if the temperature had not risen to 25°C. Pot dryness was estimated by the "poke and feel" method (Rentoul, 1984) and by lifting up the pots to decide whether the loss of moisture justified watering.

Late in November, it became apparent that the heightened watering regime had caused a complex of nutrient deficiency problems to develop. Newly grown leaves were paler than usual. In some cases they even suffered a mild degree of generalised yellowing. A certain degree of residual salting was still affecting the plants. Some marginal leaf scorch was still occurring, as well as some marginal purpling of the greener young growths. I suspected that the supply of nitrogen (N),



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potassium (K), sulphur (S), iron (Fe), and perhaps phosphorus (P), had been depleted from the potting mix.

The collection had been topdressed with 3-4 months' slow release Osmocote Plus® fertiliser in September 1987. Though the Osmocote normally releases its nutrients at a pot mix temperature of 20°C during the release period claimed on the label, higher temperatures can nearly halve the time taken to release most of the nutrients in Osmocote granules (Worrall, 1981; Handrek, 1985; Handrek and Black, 1986b).

The accelerated release of nutrients from 3-4 months' slow release Osmocote Plus® happened in my situation because of the high temperatures experienced in October. Pot temperatures would have risen higher than the prevailing air temperatures which rose into the thirties. It is likely this happened because black plastic pots absorb the sun's radiant energy and transfer the heat to the pot mixture. As a result of this, the temperature of the pot mixture is able to rise well above the ambient temperature (Lamont and Worrall, 1985; Handrek and Black, 1986c, citing the findings of Fetz). As an example of this effect, I took the temperature inside a potted mix on a 22°C day. After two hours with the thermometer's bulb buried 3cm deep and 3cm from the pot's wall, a temperature of 27°C was recorded. There seems little

doubt then, that the Osmocote I used was able to release its nutrients very rapidly on even hotter days, causing excessive salting detrimental to the plants.

To counteract the rapidly developing deficiencies caused by the heavy leaching treatments, a half and a half mix of Osmocote Plus® (3-4 months' slow release) + Nutricote® (9 months' slow release) was applied in November. A liquid feed of diluted human urine was also applied for correction of N and K deficiencies. Human urine can supply some major nutrients. Typical analyses of the major plant nutrients present in human urine are given in Table 1.

**Table 1.**  
Major plant nutrients and common salt (NaCl) contained in human urine — %

Source	Nitrogen (N)	Phosphorus (P)	Potassium (K)	Sulphur (S)	NaCl
Bodansky (1938)	1.18-1.95	0.05-0.09	0.08-0.13	0.03-0.05	0.5-0.83
Gaur & Sadasivam (1981)	1.2	0.07	0.17		
Kang (1983)	0.6	0.04	0.17		

The diluted urine feed that was applied consisted of 2 litres of fresh urine added to 73 litres of water (i.e. 1 part urine to 36.5 parts water). This was a more dilute solution than the addition of 1 part urine in 30 parts water proposed by Kang (1983) as a safe rate to use on potted orchids in Malaysia.

The urine solution was applied four times at weekly intervals. No further applications were made to avoid the excessive accumulation of salts which could occur from more frequent use. The Cymbidium leaves greened up rapidly following this course of four applications. The K deficiency was arrested and the low N status of the pot mix improved as evidenced by greening up of the foliage.

Plants which had been repotted in September 1987 in a pot mixture containing black iron oxide powder, did not have any Fe deficiency symptoms in November-December. However, plants growing in a 2-year-old mixture which did not contain iron oxide, suffered typical Fe deficiency symptoms. I tried to correct this by topdressing the Fe deficient pots with the black iron oxide powder, applying about one heaped teaspoon per 20cm pot. Some correction of the Fe deficiency occurred, but the effect was transient as the plants were growing rapidly at this time. I then began to drench the pots with an iron sulphate (FeSO<sub>4</sub>) solution (0.25 grams per litre water) as suggested by Handrek (1985) for use on ornamental plants growing in pots of soilless media. This treatment decreased the Fe deficiency more effectively than the topdressed iron oxide.

To counteract a possible lack of magnesium (Mg), a heaped teaspoon of magnesium sulphate (MgSO<sub>4</sub>) was applied per 20cm pot in December. Flowering size plants also received, at the end of December a topdressing of superphosphate and potassium sulphate, mixed in equal proportions. These fertilisers were applied as a quick-acting source of nutrients to correct P and K deficiencies and to assist in spike initiation.

Because of the continuing heavy watering program, I decided that a more complete liquid feed which included trace elements was required. Use of Aquasol®, balanced with added Fe and Mg as suggested by Johnson (1986), seemed

particularly appropriate. I started to apply such a liquid feed based on Johnson's formula, substituting the cheaper FeSO<sub>4</sub> for the iron chelate used by Johnson. The following fertiliser salts were added by volumetric measure in 75 litres of water: 50ml Aquasol®, 25 ml MgSO<sub>4</sub>, and 12.5ml FeSO<sub>4</sub>.





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- C. Ioddigesii x C. Intermedia 'Aquinii'
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- Lc. Scarlet Imp 'Irene' x Lc. Amberglow 'Magnificent'
- Slc. Tangerine Jewel 'Vi' x Soph. coccinea
- Lc. Ewart McDonald x Lc. Persepolis 'Splendor'
- Blc. Yellow Ball 'Sunshine' x C. (Patross x Tiffin Bells)
- Blc. Yellow Ball 'Sunshine' x Blc. Sylvia Fry 'Wallacia'
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To make up the liquid feed solution, the measured salts were quickly dissolved in 1 litre of hot water, tipped into a 75 litre plastic garbage bin and topped up rapidly to capacity using a fast running hose.

The proportions of major plant nutrients for Cymbidiums in the amended Aquasol liquid feed is given in Table 2.

**Table 2. Major nutrients in High-N Aquasol nutrient solution amended with Magnesium and Iron Sulphates — p.p.m.**

Salts in 75 litres of diluted liquid feed  
50ml Aquasol<sup>R</sup> weighing 58.82 grams  
25ml MgSO<sub>4</sub> weighing 23.81 grams  
12.5ml FeSO<sub>4</sub> weighing 9.26 grams

Nutrients as p.p.m. of element ( )	
Nitrogen (N) as Aquasol	180
Phosphorus (P) as Aquasol	31
Potassium (K) as Aquasol	141
Sulphur (S) as Sulphate	55
Magnesium (Mg) as Sulphate	31
Iron (Fe) as Sulphate + Chelate (in Aquasol)	25

The amended Aquasol<sup>®</sup> solution described in Table 2 was first applied in mid January, then on 1st, 6th and 20th February. Fortnightly treatments were applied in March.

To apply the solution the pots were first drenched with tap water then the liquid feed was applied evenly until it just

started to trickle out of the pots. The Aquasol<sup>®</sup> solution amended with MgSO<sub>4</sub> and FeSO<sub>4</sub> was applied approximately one hour after the tap water drench.

By early March, the effect of all these treatments was spectacular. All deficiency symptoms disappeared except possibly a slight lack of Mg which was only visible in the smallest leaf bracts (oldest foliage) at the base of a few bulbs.

Softer green growths which had occurred earlier, presumably because by the previously applied quick-acting N in urine, did not increase, even though there is a high proportion of N in Aquasol<sup>®</sup> (23%). The Johnson-based formula provides Cymbidiums with a diet of most of the nutrients they need. It was not evident that repeated use of this Aquasol<sup>®</sup>-based liquid feed increased the extent of green sappy growth. Most plants continued to become greener and this is largely attributed to the effect of MgSO<sub>4</sub> and FeSO<sub>4</sub> added to the feed solution; this agrees with the findings of Johnson (1986).

By mid March however, the N-induced limpness of some mature leaves was not decreasing. The combination of solid fertiliser (Osmocote + Nutricote) and Aquasol was obviously supplying too much N for stiffening of the leaves to happen. 180 p.p.m. N in the amended

Aquasol<sup>®</sup> liquid feed appeared to be excessive. This deduction would seem to be in agreement with the findings of Poole and Seeley (1978); they suggested that a more suitable concentration of N in liquid feeds for Cymbidiums between 50 and 150 p.p.m.

To reduce the amount of N fed to the plants, I again modified the Aquasol<sup>®</sup>-based liquid feed solution as shown in Table 3.

**Table 3. Major nutrients in Moderate-N Aquasol<sup>R</sup> nutrient solution amended with Magnesium and Iron Sulphates — p.p.m.**

Salts in 75 litres of diluted liquid feed  
30ml Aquasol<sup>R</sup> weighing 35.29 grams  
20ml MgSO<sub>4</sub> weighing 19.05 grams  
25ml FeSO<sub>4</sub> weighing 18.52 grams

Nutrients as p.p.m. of element ( )	
Nitrogen (N) as Aquasol	108
Phosphorus (P) as Aquasol	19
Potassium (K) as Aquasol	85
Sulphur (S) as Sulphate	61
Magnesium (Mg) as Sulphate	25
Iron (Fe) as Sulphate + Chelate (in Aquasol)	50

In Table 3 the concentration of iron has been doubled compared to Table 2. This was done because iron is considered as being a major nutrient for Cymbidiums (Handcock and Smith, 1980). The 50 p.p.m. concentration of Fe advocated by Handrek and Black (1986b) for use in liquid feeds, is being adopted for a trial period. The aim is to eliminate Fe chlorosis on the youngest developing leaves.

Both the concentration of MgSO<sub>4</sub> and FeSO<sub>4</sub> can be varied at will in liquid feeds as described in Tables 2 and 3. This gives the grower a convenient system to counteract the insidious Mg and Fe deficiencies that directly affect the health of plants growing in soilless potting mixtures.

Incidentally, the amended Aquasol<sup>®</sup> treatment also proved beneficial to the

## Macama Orchids

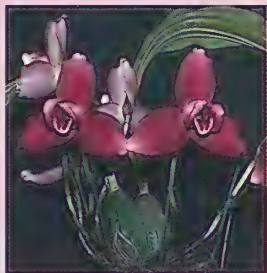
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A small plant of *Cym Bud March* showing double spiking.

*Dendrobium* species *falcorostrum*, *kingianum* and *speciosum*, *Calanthe triplicata* and *Zygopetalum mackayii*. This observation corresponds to the good results Read (1985) reported he obtained from using the Johnson formula on orchid genera other than *Cymbidium*.

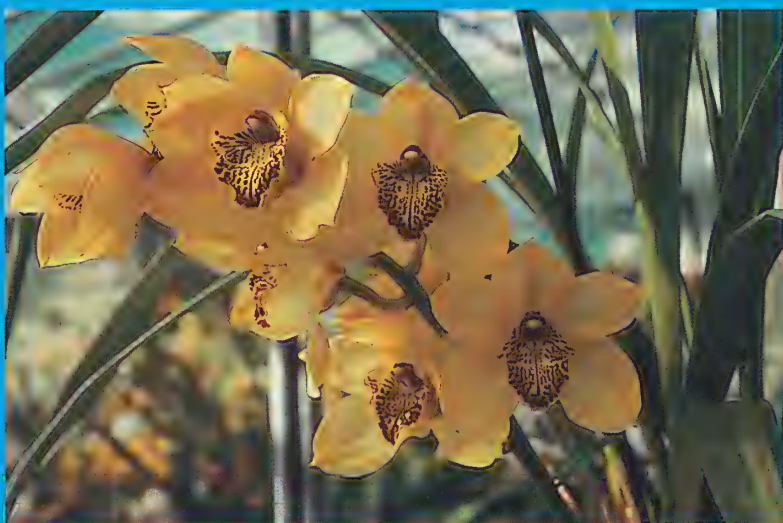
From 1983 to 1985, the fertiliser I used was mainly 9 months' slow release Osmocote®. No serious salting effect became apparent in this time. Osmocote Plus® (3-4 months' release) was used in 1986 and 1987. Very slight leaf scorching and light salt deposits at the drainage holes, occurred in 1986 and early in 1987. Because these effects did not seem particularly alarming at the time, no consistent leaching treatment was applied. This was a terrible omission I have learnt through dire experience.

From the spring of 1988 I plan to return to using 9-months' slow release fertilisers, in a mixture of equal parts of Osmocote® and Nutricote®, as proposed by Handrek (1985). I also plan to apply the complete liquid feed shown in Table 3, if it proves beneficial. This feed will be applied each 2-3 weeks with the option of more frequent applications, e.g. each 1-2 weeks at the peak of the growing season. This strategy is governed by the seasonal requirement for N and is in line with the liquid feeding practices of commercial cut-flower growers in America as

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recently reported by Grundon (1987). With this strategy though, it will be important not to over-apply the slow release fertilisers because of the risk of excessive salt release into the mix.

### DOUBLE SPIKING SUCCESS

Following the severe salting in 1987, I expected a reduction in spiking. Surprisingly this has not happened. In fact the results are beyond my expectations. I believe that the corrective fertiliser program used, PLUS a more consistent watering schedule, particularly in the warm summer evenings, has largely contributed to the spiking success described below. The stronger sunlight received by the flowering shadehouse would also have contributed to the result.

In the 1987 flowering season three of my older varieties (Doris, Samarkand 'Carol', Seacrest 'Bolwarra') produced 2 spikes each from single mature bulbs. They had responded to a complete fertiliser program using Osmocote Plus® supplemented with MgSO<sub>4</sub> and FeSO<sub>4</sub> applied as sprays, or occasionally as a drench to the potting mixture.

In 1988 the Samarkand 'Carol' plant, a variety of the 50s, repeated its double-spiking performance of 1987 on the very same bulb. This bulb is now quite large and still retains its leaves even though it is on the way to becoming a back bulb.

Another Samarkand 'Carol' plant is bearing 2 spikes on a mature bulb and a single spike has appeared on one of the 1987's new season's growths.

A bulb on Bud March (growing in a 20cm pot), which produced a spike in 1987, now carries 2 spikes on the same bulb in 1988. Another mature bulb also sports double spikes. This plant is also growing spikes on two immature bulbs developed from new shoots grown in 1987. A new season's growth on Hubert Cambourne is also producing 2 spikes.

Dorchester 'Jeanette' (a clone registered in 1932) is also producing double spikes on two bulbs. Another variety now producing double spikes from the same bulb is a cross between Showgirl 'Julie Christie' and Sylvia Miller. This cross has achieved this result in 3 pots, one of which has two bulbs double-spiking.

Oriental Legend 'Wild Rose' has proved outstandingly resistant to salting, while Dorchester 'Jeanette' has suffered much and the plant has deteriorated, losing many leaves, though it carries six spikes with well-shaped blooms, even if in a lesser floret count than for unsalted plants.

Some modern Cymbidiums are currently being advertised as having the capacity of producing double spikes. Their breeding lines are mooted as being primary causative factors. I do not dispute

this, but in my situation some much older varieties are producing double spikes from the same bulb. It is therefore logical to reason that the use of a complete and balanced nutritional program (not necessarily breeding), plus an adequate watering schedule are also at least two major factors enabling Cymbidiums to consistently produce double spikes.

I can confirm that Borough Green 'Conference' has not produced double spikes. I am not yet sure about Oriental Legend 'Wild Rose' and am doubtful about outcome.

### Note on Bud March:

I am not sure that this variety mentioned above is indeed Bud March. I bought this very vigorous and healthy plant from a supermarket. Another Bud March was purchased from Frank Slattery and the two plants look totally different. This may cast some doubt as to the veracity of the supermarket's label, as labels get so easily switched in such situations ●

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# ORCHID EXPO 88 CALOUNDRA

F. M. OELKERS

Orchid Expo 88 showed the orchid world what can be done when members of the Sub-Tropical Queensland Orchid Council get together to present something that will live in our memories for a long time.

The Sub-Tropical Queensland Orchid Council caters for growers between Caboolture and Maryborough, and every society in that area is a member society.

The Civic Centre at Caloundra was the venue for the show and conference sessions. The selection of this well appointed centre was in itself a triumph and must have contributed to the success of Orchid Expo 88.

On entering the Civic Centre I was met with a kaleidoscope of colour and could not but admire the display of quality orchids as they were arranged in and around gazeboes, only to be told I was looking at the nursery displays and that the Orchid Show was in the next room. These displays were in themselves an orchid show.

The show was out of this world and don't think that not anywhere, you could possibly see such a variety of orchids as was displayed. Orchids were on display from every state in Australia and overseas.

The Grand Champion of the show was awarded to *Vanda* Gordon Dillon 'Karen' tabled by Karen McFarlane and family.

The Price's tabled *Cymbidium* Lake Macquarie 'Winsome' was duly awarded Reserve Champion.

R and C Crawford showed us what high standard orchid growing was all about with their equitant *Oncidium* Pink Jamaica won the Champion Specimen. Growing in a 20cm pot, this show stopper carried more than 20, 60cm erect spikes, each carrying about a dozen pink blooms.

An exceptional form of *Dendrobium taurinum* tabled by D. Lublow was awarded Champion Species of the show.

*Bonatea* sp. exhibited by J Woulf was awarded the Orchid of Most Botanical Interest, it comes from South Africa.

A very superior clone of *Blc* Malworth 'Orchidglade' exhibited by E and B Patching won the Champion Cattleya.

Champion Australian Native Species or Hybrid won by *Dendrobium* Our Native tabled by L and S Grubb. To me, this primary hybrid appealed more than many of the complex hybrids. It carried dozens of yellow and lime blooms on 4 arching spikes.

Banana Coast Orchids tabled



Wynnum Manly District Orchid Society said Happy Birthday to Australia with their display at Orchid Expo.

*Dendrobium* Pink Doll that won the Champion Nobile Type *Dendrobium*.

The celebrated *Dendrobium* Rachelle Simpson tabled by S. Heyden was awarded champion *Dendrobium* any Other Variety.

*Paphiopedilum* Bell-Maud exhibited by Paphanattos easily won Champion *Paphiopedilum*.

*Doritaenopsis* Zuma White Puff, tabled by Zuma Canyon Orchids, won Champion *Phalaenopsis* or Dtps.

In the miscellaneous section, a very fine *Lycaste* Shoalhaven exhibited by Bob Raabe was awarded Champion. I noticed some very deeply coloured *Zygopetalum*

flowers and a very floriferous *Dendrochilum filiforme* awarded in this section.

The society displays were divided into different categories. Winners were: North Coast Orchid Society, Nambour, Tweed District Orchid Society, Whangarri Orchid Society New Zealand, and the Nursery Display by Aranbeem Orchids.

Champion exhibit of Floral Art was awarded to B. Perkins.

Congratulations Sub-Tropical Orchid Council and we hope the spirit of Orchid Expo 88 will never diminish and we enjoy many encores ●





Overall view of the main hall at Orchid Expo.

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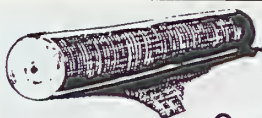
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The Bi-Centennial Orchid Show presented by The Orchid Society of New South Wales Ltd., and held in conjunction with The Eleventh Australian Orchid Conference was held in association with "Spring in the Gardens", and staged in three huge marques, laid out in an "H" configuration, in the Sydney Domain.

Despite the doubts of sufficient plants being available, due to the most unusual and on going weather pattern, a truly magnificent orchid display, a tribute to the support by the various affiliated societies, country societies, interstate societies, personal exhibitors and various trade exhibitors, was staged from Saturday, September 17 through to Sunday, September 25, 1988.

Grand Champion of the Show was the well grown and known, *Cymbidium* Lake Macquarie 'Winsome', shown in splendid form by Tom and Edith Price.

Reserve Champion of the Show was an outstanding large shapely white *Phalaenopsis* Dawn Hunter 'Houghton', exhibited by a prominent South Australian Nursery, Johnston Orchids.

Champion Standard *Cymbidium* was *Cym.* Lake Macquarie 'Winsome' owned by Tom and Edith Price.

Miniature Intermediate *Cymbidium* Champion was a well grown and presented *Cym.* Sunshine Falls 'Buttercup', entered by W. Temple.

A very fine flowering of *Blc.* Mount Sylvan 'Pink Mist', brought over from Victoria by L. Mercer, was very aptly named. Granted a Highly Commended Certificate by the judging panel.

*Vanda* Gordon Dillon 'Karen', a magnificent shapely blue black tessellated flower, exhibited by Karen McFarlane, won Champion *Vanda* and also a Highly Commended Certificate.

Champion *Phalaenopsis* *P.* Dawn Hunter 'Houghton' shown by Johnston Orchids.

A shapely rounded flower, *Paph.* Catrillo 'Domino' was declared Champion *Paphiopedilum*, delighting well known owner Nicky Zurcher from Adelaide.

Champion *Dendrobium* was a freely flowered plant of *D.* Golden Talisman 'Yamabuki', entered by Sandy Anderson of Banana Coast Orchids, with masses of apricot flowers.

A magnificent intergeneric hybrid took out Champion *Oncidium* Alliance for



# BI-CENTENNIAL ORCHID SHOW

O. R. KIDD

proud owner, Don Stephenson, *Alexandara* (McIn. Pagan Love Song x Oda. Janis Andrew) 'Starburst'. Awarded a Highly Commended Certificate also.

Faye and Lloyd Woolnough presented *Paphiopedilum sukhakulii* 'Beecroft' a large attractive form, to win Champion Exotic Species.

Champion Australian Species, *Sarcophilus hartmanii* Kerri, was a picture of elegance and quality with 13 strong racemes carrying numerous flowers.

A breakthrough in breeding by Wal and Jill Upton, *Dendrobium* Elegant Heart, a large shapely reddish flower caught the Judges eye and was judged to be Best Australian Native Hybrid.

Champion Any Other Hybrid, *Masdevallia* (fallata x veitchiana) shown by Royale Orchids, was most unusual with three stems of large reddish orange flowers.

Two magnificently flowered specimen plants were presented to the judges for appraisal, and both were successful in gaining a Cultural Certificate. A huge plant of *Lc. Chit Chat* 'Lorna', shown by "Specimen" grower Barry Long, with masses of orange flowers, and *Dendrobium canaliculatum* exhibited by L. McFarlane of Cairns, also with a grand mass of flowers.

A rare Award, an Award of Quality (minimum 12 of the same cross) was gained by Nicky Zurcher with a massed display of the coloured form of *Paphiopedilum* Maudiae. Beautiful plants with large bold flowers carried on tall stems. Well done Nicky!

The whole strength of the Show was the magnificence of the 43 displays. Metropolitan societies, native displays, country societies, interstate and trade displays, even the personal table top and floor displays added to the whole magnificent impact of colour, colour and more colour.

Parramatta and District Orchid Society staged a grand entry and won the Class 2—Display Section. Here we saw quality, variety, colour arrangement, with an outstanding points total of 87.4 points. Bankstown Orchid Society put up a splendid entry, but just fell down a little on quality and theme, running in second place with 81.9. Sutherland Shire Orchid Society presented a fine display also, but could only attract 79.4 points for third place.

Class 3.A. Display Class was won by the

S.P.E.C.I.E.S. Society with a well arranged display of species orchids in many interesting forms, with the "Bondi Tram" Society Eastern Suburbs second, with St George Society third.

Country Societies (Class 3.B.) provided great interest and competition with Morriset and District winning from Manning River and Blue Mountains. Congratulations to all concerned.

Interesting displays were presented by interstate societies, but the Victorian Orchid Club, with *Cymbidium* Jubilation 'Geronimo' to the fore beat The Orchid Club of South Australia, whilst The South Australian Orchidaceous Society and The Queensland Orchid Society placed Third and Fourth respectively.

The Native Orchid Displays were superb, with A.N.O.S. Central Coast presenting a fine Display, outpointing The Panania East Hills RSL Orchid Society with North Shore running third.

The Most Outstanding Display in the

Show, in the writer's opinion, was the entry in Class 8.B. staged by S. Batchelor, R. Rivett, D. Butler and B. Fletcher. Here we saw quality, variety of natives, loved the terrestrials, colour, arrangement and display.

Commercial Display Class saw Royale Orchids, renowned for their magnificent displays, this time presenting a high display, incorporating a five tier waterfall as a feature. Quality, variety and as always, colour carried the day.

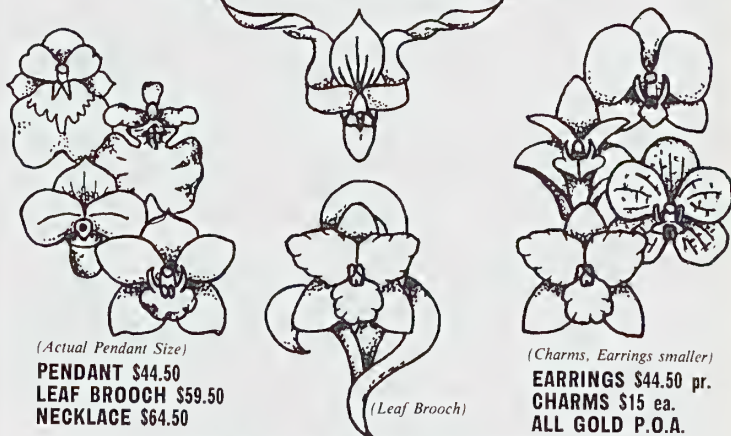
York Meredith brought along masses of species of all types and colours and staged the largest Display, and could have not been far behind Royale. Werner Diesel came third with a fine display of species and novelties and a border of *sophronitis*. Space restrictions does not allow a complet run down of the Show.

Congratulations to the winners and a big thank you to each and everyone involved in the magnificent orchid spectacular in the Sydney Domain in September 1988 ●

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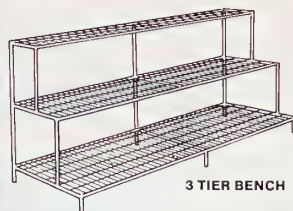
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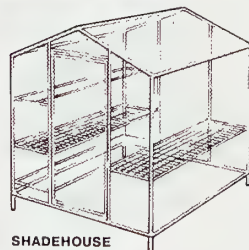


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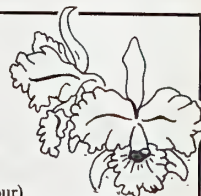
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# 23rd TQOC Conference in Darwin

A number of registrants converged on Darwin from every state of Australia, except Tasmania, Thailand, Japan and Indonesia for the 23rd Tropical Queensland Orchid Council's Annual Conference held at the Hotel Darwin Convention Centre June 10 to 13.

Local, interstate and overseas speakers participated, with Marj Purnell speaking on The Antelope Orchids — The Spatulata Section of Dendrobiums; Professor Rapee Sagarik — Vandaceous Orchid Species and Potential of Hybridisation in Thailand; Local identity, Dennis Hearne discussing Tissue Culture, Soil Sterilisation and Seed Propagation and Barry Paget spoke on the Judging of Paphiopedilums.

Orchids, foliage and flora art were exhibited with the successful competitors being:

Grand Champion of Show and Champion Vandaceous. *Ascda*. Motes Flamboyant — Eileen and Albert Buhr.

Reserve Champion and Champion Dendrobium. *Den*. Boon Choo Gold — Kevin McFarlane.

Champion Cattleya. *Bc*. Pastoral — Kevin McFarlane.

Champion Australian Native Hybrid. *Den*. Minnie — Kevin McFarlane

Champion any other Orchid *Calanthe* William Murray — Harry Van Der Ven.  
Champion Species *Rhyn. gigantea* — Christine Grimm.

Champion Oncidium *O. crispum* x *O. varicosum* — A. Surjono (Indonesia).

Champion Foliage *Homoloaeno rubra* — Jenny Tsangari

Champion Flora Art — Min Korsman.  
Special awards were presented by TQOC patron, Frank Slattery, to Ron Merritt, Val Treloar, Marj Purnell and Ken MacPherson.

At the Annual General Meeting of the TQOC, a new executive was elected, all from Townsville. Mick and Thelma Keith, President and Secretary respectively, Wal Nicholson, Treasurer and Tom Verran remaining as Registrar for the next two years.

After days of touring nurseries and private collections, warm hospitality and excellent atmosphere, the conference

closed with most in agreement that they had participated in the best TQOC Conference on record ●

## PROPOSED INTERNATIONAL ORCHID BADGE CLUB

At the recent Australian Orchid Conference, held in Sydney, an International Orchid Badge Club was formed. The objects of the Club are varied. A Committee was formed and the principal office bearers are: President — Mr Jimmy Dench (New Zealand); and Secretary, General, Mr Barry Collins (New South Wales).

Further details can be obtained by forwarding a self addressed envelope to: International Orchid Badge Club, Mr Barry Collins (Secretary/General), 245 Avoca Street, Randwick, NSW 2031, Australia ●

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OR.03 *Phal.* (javanica x Ambomanniana) x *P. stuartiana* 'Larkin Valley' BCD\* Medium round yellows of heavy substance and spotting.

OR.04 *Phal.* Kathleen Ai 'Yahiro' x *P. Marcie Girl* 'ABC'. Pinks and whites of good shape with contrasting striping.

OR.05 *Phal.* Lippegruss x *P. Mary Tuazon* 'Lehua' BCD A crossing of two exceptional pinks from Hawaii.

OR.06 *Phal.* Marcie Girl x *P. equestris* 'Illocos' ABCD A profusion of small striped pink flowers on branching spikes

OR.07 *Phal.* Rich's Pride x *P. equestris* 'Illocos' ABC Dark striped pink flowers, red lip, branching spike habit.

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OR.12 *Sc.* Carol Lynn 'Nakabayashi' (m) (A) round purple, yellow throat.

OR.13 *Sl.* Psyche 'China' AM/AOS (m) (A) deep orange red

OR.14 *Sc.* Batemanniana 'Hawaii' (m) (A) purple with dark splashes.

OR.15 *Slc.* Yellow Doll 'Mitzl' AM/AOS (m) (A) bright yellow.

OR.16 *C.* Little Bit x *C.* Small Fry (A) (B) pale rose with red lip

OR.17 *Sl.* Orpetii x *Sl.* Psyche (A) Full shape orange red

OR.18 *Sc.* Beaufort x *C.* Little Bit (A) (B) Round yellows, pinks

OR.19 *C.* Small Fry x *C.* Tin Roof (A) (B) Pale mauve pink lip

OR.20 *C.* Dual Aura x *L.* Oweniana (A) (B) Pale pink cream throat

OR.21 *Lc.* Tiny Treasure x *Lc.* Pink Favourite (A) (B) Pink some splashes

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OR.25 *Blc.* Gloria Schmidt x *Blc.* Faye Miyamoto (B) (C) Large yellows, red lip.

OR.26 *Blc.* Gloria Schmidt x *Blc.* Mem. Sangah Chit (A)(B)(C) large round orange, yellows

OR.27 *C.* Penny Kuroda x *C.* Thospol Spot (A) (B) Waxy clusters, splashes and spots.

OR.28 *Lc.* Netrasiri Doll 'Bicentennial' FCC/CST (m) (A) Waxy yellow cluster, red lip.

OR.29 *C.* Suavior Aquinii 'Kosaki' (m) (A) Full shape pink, splash petal.

OR.30 *Blc.* Chinese Beauty 'Chien-Chien' AM/AOS (m) (A) bright yellow red splashes.

OR.31 *Pot.* Esther Costa 'Orange Fantasy' AM/AOS (M) (A) round orange yellow lip.

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# BOOK REVIEW

## You, Too, Can Grow Orchids

Editors: Ralph Handcock, Margaret Smith  
Publishers: Child & Associates Pty. Ltd.  
Seventh edition hard cover RRP \$19.95.

A complete update on this very popular book written for Australian orchid growers.

All chapters have been updated, as well, all illustrations have been improved using modern hybrids and the photographs contain many plants awarded in NSW.

A book that can be recommended to the individual and orchid societies for their libraries.

Obtainable from most bookshops.

## Phalaenopsis Culture — A world wide survey

Edited by Bob Gordon

Published by Laid Book Publications,  
Rialto, California USA

Soft cover — RRP \$39.95

Each chapter begins with a statement of consensus and opinion which was responded to by 150 of the leading Phalaenopsis growers throughout the world.

The topics covered are light, heat, water/food, air circulation, rooting medium, pests/pesticides, disease control, viruses, flower induction and many more.

Can be recommended for the Phalaenopsis grower and society if only for the diversity of responses to the many topics proposed.

A companion volume Phalaenopsis a cultural hand book \$27.50.

## The Genus Cymbidium

By David Du Puy and Phillip Cribb  
Illustrations by Claire Smith

Christopher Helm Publishers Limited

The genus *Cymbidium* has never been adequately covered within a single volume. A new monograph by Drs Du Puy and Cribb, for the first time, brings together all the pertinent information on these important orchids. The introductory chapters cover the structure and anatomy

of the species, their chromosome numbers, pollination and floral fragrances, distribution, biogeography and evolution, their ethnobotanical uses and how to grow them.

The book traces the history of *Cymbidium* in cultivation, going back at least 2,000 years in the Far east. A chapter of the history of hybridisation in the genus, with particular reference to the significance of the species, has been specially written by Ernest Hetherington and Andy Easton, two of the world's foremost authorities on the development of horticultural *Cymbidiums*.

The main part of the text comprises a complete taxonomic account of all known species in the genus. The authors recognise 44 species, and have used modern biological techniques as well as classical methods to arrive at their decisions. Most of the species are known to the authors in cultivation, and the majority have been studied by them in the wild.

Drs du Puy and Cribb are recognised authorities on the genus *Cymbidium* and

the authors of several books and many papers on orchids. This work, prepared at the Royal Botanic Gardens, Kew, is the result of five years of research and many hours of field work in the Asian tropics and subtropics.

The 28 specially commissioned, life-sized watercolour paintings by Claire Smith have been awarded a Gold Medal by the Royal Horticultural Society. In addition, 143 colour photographs of the species and of their habitats are included. Distribution maps are given for each species. There are numerous line drawings and anatomical illustrations also included in this handsome volume.

This book will be the standard reference work on these important orchids for a lifetime, and will be a fine addition to any orchid library or an excellent gift for an orchid grower for Christmas.

\$99.00 — 256 pages; 28 watercolour paintings; 143 colour photographs, 8 halftones, 24 line illustrations, 11 maps.

These three books are available from Orchids International Pty. Ltd. 6 Highland Street, Guildford, NSW 2161.

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M.183	<i>Pot.</i> Rising Moon 'Apricot Glow' BM/JOGA Orange to bronze	4" Pots	\$15.00
M.185	<i>Lc.</i> Hawaiian Fantasy 'Dora' HCC/AOS Cream sepals and petals, purple splashes on petals and lip blooms at least twice a year	4" Pots	\$20.00
M.188	<i>Blc.</i> Chinese Beauty 'Tainan Beauty' Yellow with scarlet overlay, large yellow eyes in throat	4" Pots	\$20.00

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## VALE

### Roger Seymour Hunt

It was with the deepest regret that we learned of the death of Roger Hunt, who passed away on July 12, 1988.

Roger joined the Orchid Society of WA (Inc) in September 1978. At the time of his death he was an accredited Judge of the Society, Deputy Registrar, Official Photographer and Auditor for the Society and was Secretary for the forthcoming 12th Australian Orchid Conference. He was also a workshop speaker and fundraiser. All of these duties he carried out most efficiently and he was always there to lend a helping hand when needed.

His untimely death will leave a void in our Society which will indeed be very hard to fill.

He was also a member of the Committee of Melville Districts Orchid Society and their Immediate Past President.

Roger had a cheerful disposition and will be very much missed by his friends, not only in the Orchid Society of WA and Melville Districts Orchid Society, but the other Societies too, who knew him well in his capacity as a Judge and through his love of Orchids, in particular the Australian Native Epiphyte in which he specialised.

To his wife Nell and family we offer our sincerest condolences.

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## The History & Culture of *Dendrobium Nindii*

Rev Dr Ron Collins

The habitat of *Dendrobium nindii* provides clues to its cultivation. It is a difficult orchid to cultivate, and those who have penetrated the areas where it occurs will know the labours of its collection, and once it is seen in flower, the desire to grow it.

George Elphinstone Dalrymple who was the member of Parliament for the whole of Queensland north of Rockhampton, examined the coastline to find a suitable port for the Palmer goldfield. Sailing from Cardwell, he dropped anchor for the night in Mourilyan Harbour near the site of present day Innisfail. P.H. Nind who had joined the party at Dunk Island sailed up the Moresby River looking for suitable land for growing of sugarcane. The stream supports mangroves in great profusion and branches into Nind Creek where it narrows to block further passage by boat and it was there that he saw a large orchid plant in magnificent full bloom. For the moment he put all thought of sugarcane out of his head and collected the plant. Gleefully he brought it back to Walter Hill who was in the party. This was September 4, 1873.

Hill was the government botanist and the founder of the Brisbane Botanic Gardens.

The next year the orchid was described in a report by Hill, presented to the Legislative Assembly of Queensland and named *Dendrobium nindii* to commemorate its discoverer.

The description in English was sufficiently detailed to withstand the challenge of the Latin description of Frederick Manson Bailey (now the government botanist) who in 1890 named it *D. toffii*.

It is interesting that the orchid was first found on the southernmost limit of its habitat, but in fact is not surprising as all exploration proceeded from southern ports.

The orchid remained little known and less grown for the two reasons, that it was difficult to find and even more, hard to grow, for it demands exacting conditions hard to duplicate. The host plants upon which it is found are either mangroves or tall, smooth surfaced palms.

Both grow in situations difficult of access — the mangroves in oozy mud, and throwing up multitudinous arching and slippery roots which permit only slow progress by the searcher; the palms on the other hand are surrounded by water where crocodiles make their home, and rooted in mud, or on little islands surrounded by thick vegetation which have thorns or serrated cutting leaves to repel all intruders. These conditions combined with the sweltering heat of the tropical habitat can provide protection from all but the most determined collector.

The beautiful white and mauve flowers of this member of the section *Spatulata* is always a spur to the orchid lover which impels an attempt to grow it. Its near relative *D. discolor*, has a much larger habit and less demanding conditions.

*D. nindii* is found in New Guinea where it grows even in the coastal rain-forest and up into the mountains to a height of nearly 1000 metres, but always in a situation which is constantly humid.

In Queensland, it can be found in coastal strips in lower latitudes, but as one progresses further up Cape York Peninsula the habitat widens to include deeper penetration from the coast but still on the verge of the rainforest, always where the humidity is high.

The root system is not as dense as that of *D. discolor*, but the roots will grow to a length of a couple of metres in a large plant. It is always so positioned that the roots will quickly dry, despite the tropical

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*Dendrobium nindii*

rainfall, and the smooth barks of its hosts ensure that there will be no prolonged retention of moisture. This also is a condition of its host trees in New Guinea.

Although *D. nindii* will never be found growing in shaded areas in Queensland, it apparently can accommodate much less light in New Guinea, where it can thrive in the rainforest. It would seem then, that heat is an important factor, but not so critical as the ability to have its roots so positioned that they will not remain wet for long when the rain is finished.

This is a plant which is not recommended for the beginner unless there is a sizeable citrus tree or a smooth barked palm to which it may be fastened. Moreover, the orchid initiates its new growth in the colder part of the year and therefore if it is grown in the open there is always the danger of frost.

On the Atherton Tableland it is possible to grow *D. nindii* outside an orchid house if it is in a protected area where freezing does not occur. It delights in smooth barks and will even flourish on a peach tree with its smooth bark.

On the coast I have seen a plant growing on a mandarin tree with pseudobulbs more than two metres in length; on the Tableland it never grows to such height. The cold of winter forbids it.

It may be grown in an orchid house

under 30 per cent shade cloth where it receives maximum sunlight in an earthenware pot which is just large enough to contain its roots and potted in very coarse fir bark and pieces of gravel or brick no smaller than 2½ centimetres. Drainage at all times must be perfect. It responds very well to any orchid fertilisers, but the application should not be more frequent than once a month. It appears that its liking for smooth bark also restricts its need for frequent feeding, and the reward is a flower spike which can be up to ¾m, and to my mind one of the most appealing of the dendrobiums in the section *Spatulata* ●

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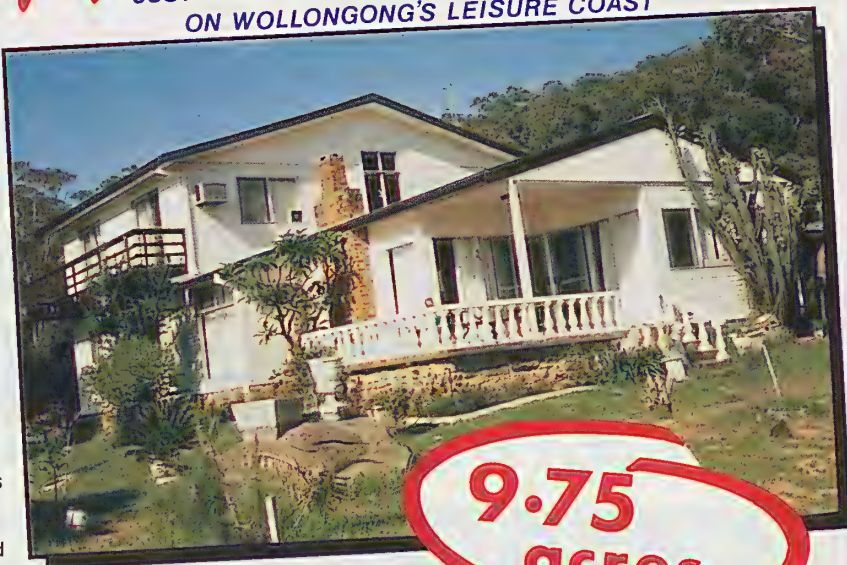
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# Orchid Review



FEB 1989

FIRST OF SIX ISSUES FOR 1989

FEBRUARY 1989





## YORK MEREDITH'S

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*Paph. spicerianum*



**Paph. sublaeve:** ex Malaysia. Like *P. callosum* but at least two flowers on stalk. Warm .....\$20  
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*Paph. exul*



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*Paph. hirsutissimum*



### BRILLIANT AND UNUSUAL COOL-GROWERS! THE RUPICOLOUS LAELIA GEMS OF BRAZIL

They're compact. They're cute. They're easy to grow and York has the greatest collection of these Brazilian *Laelia* species in Australia. All plants are flowering size.

**L. esalqueana** (see photograph). The plants are dwarf, the flowers brilliant golden yellow. A few plants only. Cool grower. \$30

**L. bahiensis** sparkles with orange-yellow flowers in the Spring. Easy cool grower. \$30

**L. crispilabia** the richly-coloured rose species with the beautiful lip. Cool. \$30

**L. endsfeldsii** throws a long spike of rich yellow flowers. A rare one. Value at, \$40

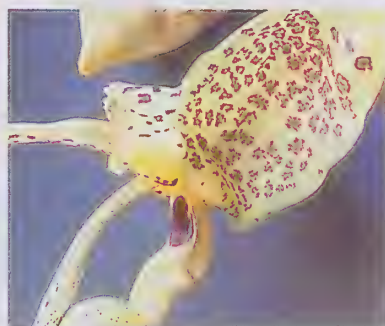
**L. longipes** sprays of pretty pale pink flowers with a yellow labellum. Cool. \$30

**L. reginae:** compact sprays of pink flowers with yellow lip. Some nearly white. Cool. \$35

**L. tereticaulis.** Big, gutsy plants that have already been flowering all the way from pale pink to lavender. Cool. \$40



*Laelia esalqueana*



*Stanhopea species*

### EYE-CATCHING GONGORAS!

Gongoras spill necklaces of elegant-shaped flowers rather like miniature *Stanhopeas*. Intermediate temperatures.

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**G. galeata** from Mexico is similar, in gold to chestnut. Elegant long lasting flowers. \$25

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**B. perrinii**, similar, free-flowering species from Brazil at, \$25 Both are intermediate.



## FROM THE EDITOR

### UNPUBLISHED ARTICLES WRONG ADDRESSES

We are aware that many articles have been submitted in late 1987 and throughout 1988 which have not been published or acknowledged.

It is Mr David Wallace's practice, as EDITOR, to have all articles he receives ACKNOWLEDGED.

We strongly urge that you resubmit articles if you have not received an acknowledgement as they may have been sent to the wrong address.

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## Next Issue

Back to species in *Odontoglossum*  
Hybridising — *O. harryanum*

A superior parent — *Bc. Deesse*

Growing of warm tolerant  
*Dendrobiums*

Native Epiphytes in Southern  
Victoria

Judging the genus *Stanhopea*

## ADVERTISERS APRIL ISSUE

Deadline for advertising copy is  
February 10.

## Cover Story

*Potinara* Twenty-four Carat 'Gold'  
AD/AOC, N.S.W.

This plant was bred by Armacost and Royston using *P. Lemon Tree* x *Blc. Yellow Imp.*

The plant is owned by Mr. Kevin Hipkins of Royale Orchids. He also obtained the AD of the Year with *Paphiopedilum Goultenianum* AD-AOC/OCSA.

# Australian Orchid Review

Volume 54 — No.1

FEBRUARY 1989

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advertisers and readers.

# THE RETURN OF THE COUNT

A decade has now passed since Dr  
Carlyle Luer first saw fit to separate the  
*Saccilabiatæ* section from the  
*Masdevallia* to create the new genus  
*Dracula*; which is Latin, meaning a  
"Little Dragon". Rightly so as the  
botanical differences are great and signi-  
ficant. Much of the old literature, in fact  
all written and printed before 1978 will  
still refer to this distinct group of orchids  
as *Masdevallia*, contemporary collec-  
tions also label many plants thus.

In Victorian times draculas (known  
then as masdevallias) enjoyed immense  
popularity, the most popular at that time  
being what is now the type species for  
the genus, *Dracula chimaera*. An article  
in the *Gardener's Chronicle* of January,  
1875 and written by W. G. Smith stated,

"No one who sees *M. chimaera* for the  
first time can say it possesses any  
intrinsic beauty of its own, for its aspect  
is grotesque and whimsical in the ex-  
treme;" he goes on to say that "*M.  
chimaera* will always be esteemed for its  
peculiarities...they remind one of acro-  
bats walking on stilts with a balancing  
pole, and the front view of a flower is  
not unlike a twisted clown's face dis-  
torted with a grimace". Nothing has  
changed and it appears that 100 or so  
known species making up the combin-  
ation of the two genera were well grown  
in those times, it was only the advent of  
cymbidium fever that saw these wonder-  
ful pleurothallids along with the  
*Odontoglossum* alliance lose favour  
only to re-emerge in modern collections

*D. minax* one of the rarer lesser known but desirable species but aren't they all?





## Ray Thomson

with what may be a popularity even greater than the original.

With over 350 *Masdevallia* and 80 distinct *Dracula* now described we have a wonderful treasure chest of shapes, colours and sizes to tempt and fascinate all tastes, even the lovers of miniatures and botanicals. Why is *Dracula* different from the *Masdevallia* from which they were excised?

The first clue must be found in the broad description of "the Saccilabiates", this reference is to the sack-like (sometimes referred to as shell-like) lip of the genus; quite different from any *Masdevallia* lip, there appears to be a division into a hypochile and epichile, also mobility is often a feature with the hinge at the foot of the column which carries the pollina; lips can also be usually large and in one species, *Dracula bella*, so large as to be out of proportion to the rest of the flower, radiating veins are also a prominent feature on the lips of many species.

If you like your flowers hairy, then you'll just love *Dracula* and with the longest tails or caudae in the whole of the *Pleurothallidinae* there is no wonder the genus has also a reputation for appearing to be grotesquely weird! Also for those with a penchant for the "off beat" and in association with the search for the black orchid; you are going to find something very close to what you have been searching for in the species *Dracula vampira* which goes close in many examples to a true blackish-chocolate. Add a few veins and striations embellished with hair enough to make a Tarantula envious and you have that magic show stopper the IS different.

Considering that to display this weird creation at its best it must be hung; we have then added the correct atmosphere to set off the whole visual experience. It is a fact that most *Dracula* must be hung! Only a few such as *D. severa*, *D. berthae* and *D. cochliopsis* send their inflorescence pendant or even decumbent burrowing down through the compost to emerge at the side or even bottom of the open mesh basket which is an absolute necessity if you are even to see the flowers.

I make my baskets from various wire meshes or plastic mesh or net pots. If you can find them, round or square, it matters not but the growing medium certainly does; it should be loose enough to allow free passage of the developing burrowing spikes but it must not dry out and nor should it tend to fall out of the



*D. diabolus*, one of the smaller species it is nevertheless both charming and quaint and has a profusion of blooms of horizontal or pendant habit during early spring.



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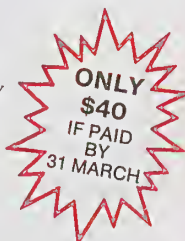
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*D. radiosa* 'Funny Face' the name says it all! and a sequential flowerer as well to keep you laughing for many months with its quaint display.

mesh, a good lining is made from teased coconut fibre as this does not rot and allows the inflorescence free passage through the side or bottom of the basket.

The moisture retaining element as for *Masdevallia* is *sphagnum* moss and I try to incorporate strands rather than finely chopped, as here we are dealing with a wet growing epiphyte without, in most examples of the genus, the thick coriaceous water retaining leaves of the *Masdevallia*. *Dracula* leaves are in fact rather papery with a most prominent central rib or spine. The leaves and flowers can dehydrate rapidly either because of low humidity or low moisture levels in the mix and this is why stranded *Sphagnum* with its greater water holding capacity is an important if not crucial component of the whole medium which can be based on a coarse *Cymbidium* mix. I like to add dried and shredded tree fern or bracken frond and

have a preference, as do the plants for things organic and natural; rejecting modern plastic substitutes for those materials closer to what nature provides and all for free!

Percentages for making up the mix should revolve around these suggestions which can be adapted to suit your own microclimate and watering frequency. *Sphagnum* should be fresh, light in colour and stranded. Add 20 per cent. Chopped tree fern or bracken frond can be 10 per cent, making sure the frond is dry and brown in colour if green, a week or so in the sun will soon dry it out.

The *Cymbidium* base mix which makes up the greater component of 70 per cent should not be the fine saw dust type mix so popular in warmer climates. Make sure it is the type which contains good chunks of 10 to 12mm bark and a little gravel if present also helps to keep things nice and open so that we have a



medium which will be constantly damp but allows free passage of air around the root zone and excess water to rapidly drain off.

Don't forget a good pinch of hoof and horn or bone meal per hanging basket which should have a maximum diameter of 8 to 10cm and a mesh similar to canary wire.

I believe the greatest problem facing the *Dracula* cultivator will be the maintenance of specific qualities of the air in which the plants are grown and/or hung. Growers of miltoniopsis, the Colombian miltonias will have no worries in providing correct air temperatures which ideally would not vary much from around 15 to 16°C. I find no trouble in going down to 12°C and I can achieve this by hanging the draculas above the masdevallia's mildly warmed sand beds. This leads us to the next and possibly most important air quality, that of humidity. If your warmed sand bed is kept constantly damp which it should be, humidity rising up to surround the hanging draculas will be automatically provided. Sixty per cent absolute minimum humidity is a good figure to aim for but ideally if we were to copy nature 70 to 80 per cent or higher, especially at night is relished by the plants.

All this humidity is, even with draculas, going to cause problems if the



*D. chimaera*, the type species for the genus is sequential in it's flowering habit, with up to six blooms in succession this species can be in flower for many months.

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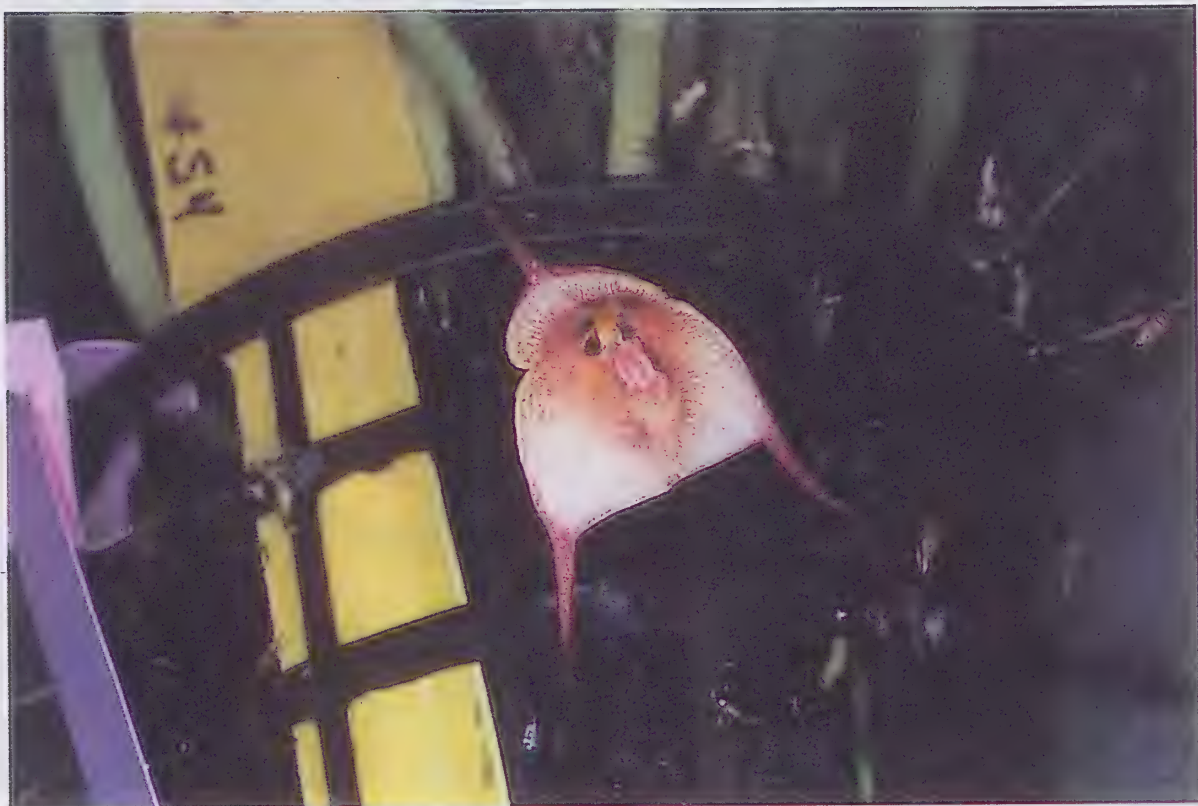
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*D. presbys* illustrates the habit of the flower burrowing through the compost to emerge out the side of the mesh pot.



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air in the growing environment is stale and stagnant, so air movement enough to keep leaves gently moving in a mild breeze will effectively combat most fungal problems.

It is worth noting that even the heavily diffused light of a darkish Colombian forest from whence our draculas have come, there is always air movement and a sweetness in the air. We must closely duplicate this for successful culture. To achieve flowering and healthy blemish free leaves, plants should not, however, be subjected to strong draughts.

It is worthwhile at this juncture to have a look at surface temperatures year round in the areas of Colombia to which most draculas are endemic, situated just 6° north of the Equator but at 2000 metres (7000 ft) altitude. Medellin, the second largest city of Colombia and undoubtedly the orchid capital of that country, is known as the "City of Eternal Spring" and for good reason as temperatures vary little between winter and summer, a 15°C average winter temperature rises to a most pleasant 20 to 23°C in mid summer giving an average differential of only 5 or 6°C for the whole 12 month period; slight variations of a few degrees either way may occur but at most this deviation from the average is insignificant as far as *Dracula* culture is concerned. With an annual rainfall of between 150 and 200 cm and that's nearly 80 inches or 6½ feet of rain, humidity is relatively high at all times.

No wonder the pleurothallids and in particular the draculas have developed and evolved without pseudobulbs or canes as with daily damping down through rain, mists and fog, special water storage organs as found in orchids subject to long dry periods become unnecessary.

During an overseas photographic session working with draculas, after setting up on a *D. chimaera* I was distracted for a short time. On returning to the camera and flower I found a shaft of sunlight had struck the bloom where-upon, within a minute, it had folded and begun to shrivel and lose its glory, after the sunlight had passed and within 15 minutes the flower had re-hydrated itself and it was plumped up as before, this experience tells us much about light levels and heat. Sunlight and even bright diffused light can be far too much and will be distressing to the plants, something less than light given for paphiopedilums should be aimed for. I grow my plants suspended but hanging below other plants, in full shade at all times; if light is too intense rapid yellowing and drying of the tips of the leaf blades will occur, plants will do poorly and may even die if subjected to

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this treatment too long. I have seen plants absolutely ruined and devastated by a week of early spring sunshine when shade and paint had not been applied on time!

At this point it is worth while examining the unfortunate phenomenon of the floral bud shrivelling or rotting off when so close to flowering thus robbing us of the fruits of our labours and meticulous attention to all the important details, or so we thought! I am often asked why this happens, not only with the inflorescences of *Dracula* but in particular the most frustrating similar experience of those among us who grow well and

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bring to the point of flowering the beautiful species *Masdevallia amabilis*, a most prolific flowerer under the correct conditions which appears to be thwarted most often than not by a few lapses, no doubt unintentionally, to important cultural details.

With both genera we have a requirement for cool to mildly intermediate conditions but with high humidity and gentle air movement at all times. From my experience I have determined that the loss of floral buds under cultivation is a combination of these factors, primarily a loss of humidity in the growing environment such as may be experienced during a windy but dry day, even during the winter. Combine this with a temperature rising above 20°C with little or no air movement and you have the recipe for disaster. At all times during floral bud formation humidity above 60-65 per cent is advisable. If you cannot maintain temperature maximums at this time of 20-25°C humidity must go even higher, say 70-80 per cent at 30°C and increase air movement around the plants. Follow these suggestions and I'm sure you'll more often enjoy the floral reward for your labours.

Draculas do not fit in well with an orchid collection requiring high, light and warm conditions so do not be tempted to try them with your vandas and hard cane dendrobiums. These wonderful pleurothallids are disappearing from their natural habitat along with the South American rain forests from whence they have come at an alarming rate and any attempt to cultivate them should not be taken on lightly, some expectation of success should be felt before a purchase, or should I say investment, is made.

Seedlings of both species and primaries will shortly be available and then experimentation can responsibly be undertaken. In the meantime, to grow and flower, a few of these marvellous monsters remains one of the most exciting, even thrilling experiences that come along now and then in the wonderful world of orchids.

If you strike upon the correct set of conditions, few orchids offer such good floral value as the *Dracula* as most species are sequential in their flowering habit, so during a season lasting many months individual blooms will deteriorate after a week to 10 days only to be replaced rapidly by another of like size and quality.

Draculas being correctly cultivated will also grow vigorously and division may be undertaken once a good big fist sized clump has developed. Divisions should, or should I say must be more generous than with *Masdevallia*, dividing the



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*Dracula* into clumps of a dozen or so leaves will help the plant to overcome the stress associated with such an operation. Don't forget to dust the severed rhizomes with a fungicide, I use old fashioned, but never bettered sulphur dust. I would strongly advise you not to carry out division during the summer months as rapid leaf drop may occur, further weakening the plant. Late autumn will be best.

In conclusion, may I suggest that if you are growing *masdevallias* well, moving on to *draculas* will be a logical and most rewarding step in your search for something more than just a little different.

Some species lend themselves to artificial cultivation practices just a little easier than others and I suggest you seek out and try these easy species first.

*Draculas erythrochaete*, *D. soderoi*, *D. benedictii* and *D. severa* will provide a good cross section of types and if you are successful with their cultivation moving on to the rarer and more spectacular will be an easily taken step. Although endemic to the slopes of the Andes running down from Costa Rica through Central America into Colombia

and Ecuador these aforementioned species all grow in a tropical climate which is radically tempered by altitude allowing us to transfer them to a cool to intermediate environment without great drama as long as the previously mentioned air qualities of cool, humid and bouyant are adhered to.

Yes, weird, grotesque, horrid, ugly! *draculas* are all those things and more, but they are also cute and to my eyes, many species are stunningly beautiful. They lay down a challenge in their cultivation which may not be easily met but, Oh! the rewards if you are successful.

Between them the combined genera of *Dracula* and *Masdevallia* make up something in the order of 500 species within the Pleurothallidinae, to collect and work these orchids is more than a lifetime's work. At this point in time we are only just beginning to realise the huge potential of intergeneric breeding between the groups. Will you take part in all this excitement? ●



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# HUMIDITY

Gordon C. Morrison

Prior to the late 1960s plant ecophysiol-ogists measured two important environ-mental factors, namely irradiance (sun-light) and humidity, by methods more suited to humans than to plants. Over the next decade or so the methods of measurement changed over to those more relevant to plant response hence are more meaningful. The general litera-ture on orchid culture has not caught up with these changes, perhaps because no one has bothered to raise the subject so the purpose of this article is to encourage a change in the measurement of one factor, namely humidity, somewhat belatedly perhaps but hopefully it will have some effect.

Humidity is defined as — *The amount of water vapour in the air.* However the word "amount" needs further elabora-tion. It can be expressed in two ways:

- (a) on a mass per unit volume basis, ie., milligrams of water vapour per cubic metre of air at sea level. This is called **absolute humidity**; or
- (b) on a mass per unit volume basis, ie., grams of water vapour per kilogram of dry air. This is called **specific humidity**.

As a mass of a kilogram of air is the same wherever measured the specific humidity is a preferred term. These are the only two direct ways of measuring and stating humidity. Any other methods are indirect. However, neither method is very informative to plantmen and possibly less informative to plants.

Perhaps the best known indirect method of stating humidity (and the most mis-used and mis-understood) is Relative Humidity (RH) which is a simple ratio which can be expressed as a percentage. It is the ratio of the water vapour we have to the water vapour we could have at a given temperature, or simply  $e/e_{sat}$  where (e) is the existing water vapour pressure and  $e_{sat}$  is the vapour pressure of the water vapour in saturated air at a given temperature. As  $e_{sat}$  varies enormously with temperature, about a 5 to 1 increase as the temperature changes from 5 to 30°C, three points become clear.

1. RH is dimensionless, it is simply a ratio.
2. Any statement of RH without an accompanying statement of tempera-ture is meaningless and nonsensical.
3. The RH value will vary inversely with temperature if the water vapour mass does not change.

The subject of RH will not be pursued

further here as it is primarily a human comfort (or discomfort) factor. In the days long ago when temperature was measured in degrees F the sum of temperature and RH became a "comfort factor" which, if it reached a high value, became a "discomfort factor".

Plant metabolism is not cognisant of the  $e/e_{sat}$  ratio but rather with the difference between the plants internal water vapour pressure and that of the surround-ing air. This is the force which produces evaporation from the leaves. It is called the Saturation Water Vapour Pressure Deficit (SWVPD) of just VPD for short and is an indirect method of measuring the effect of humidity from the plant's viewpoint.

$VPD = e_{sat \text{ leaf}} - e_{air}$ . VPD is now the recognised method of expressing humidity by plant ecophysiol-ogists and I hope it will replace RH in orchid culture.

The value  $e_{sat \text{ leaf}}$  is the water vapour pressure at saturation at leaf tempera-ture. As this latter is difficult to measure the air temperature is used. Providing

forced air convection is present, created by wind outside or fan(s) inside the glasshouse to produce air turbulence there will generally be little error from this assumption. The thickness of the leaf boundary air layer is reduced by turbulence and the heat is carried away from the leaf.

The values for  $e_{sat \text{ leaf}}$  and  $e_{sat \text{ air}}$  are obtained from tables and from calcula-tion but it is unreasonable to expect an orchid grower to calculate the VPD every time he/she takes readings from the wet and dry bulb thermometers. This would sound the death knell of VPD usage very smartly. To overcome this one could do some 240 calculations and provide a "reference table".

The expression for calculating  $e_{sat}$  is:  $6.108 \exp [(17.2674 T)/(T + 237.28)]$  hectopascals (hPa). This indicates that a graph drawn on log-linear paper would be a series of straight lines and only involve 24 calculations. Such a graph accompanies this article and it may be photocopied as many times as necessary

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and hung under a plastic cover in the glasshouse. Note that the ordinate (vertical scale) is logarithmic in that the distance between hPa values is a function of the common log of the value, eg., the common log of 2 is 0.3 so the distance between 1 and 2 takes about one third of the space between 1 and 10.

To use the graph one simply reads the temperatures of the wet and dry bulb thermometers, takes the difference and travels along the relevant sloping line to intersect with the wet bulb temperature then proceeds horizontally along the graph to read the VPD, eg,  $T_{dry} - T_{wet} = 8$  and  $T_{wet} = 20^{\circ}\text{C}$  which gives a VPD of 20hPa.

The hectopascal is used here as this

term is equivalent to the older and now disused term "millibar" although strictly speaking kilopascal is the preferred term such that  $20 \text{ hPa} = 2 \text{ kPa}$ .

The graph was compiled using a psychrometric constant of 0.66 which assumes that the thermometers are aspirated by wind or a fan. If only free convection is used, ie, air movement is only due to air temperature differential then a constant of 0.8 is applicable. This would increase the VPD by a hectopascal or so which would not be too significant a change.

Note that unlike RH, VPD does have a dimension and although temperature readings are taken to determine the VPD

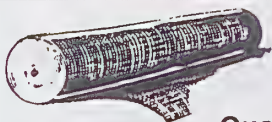
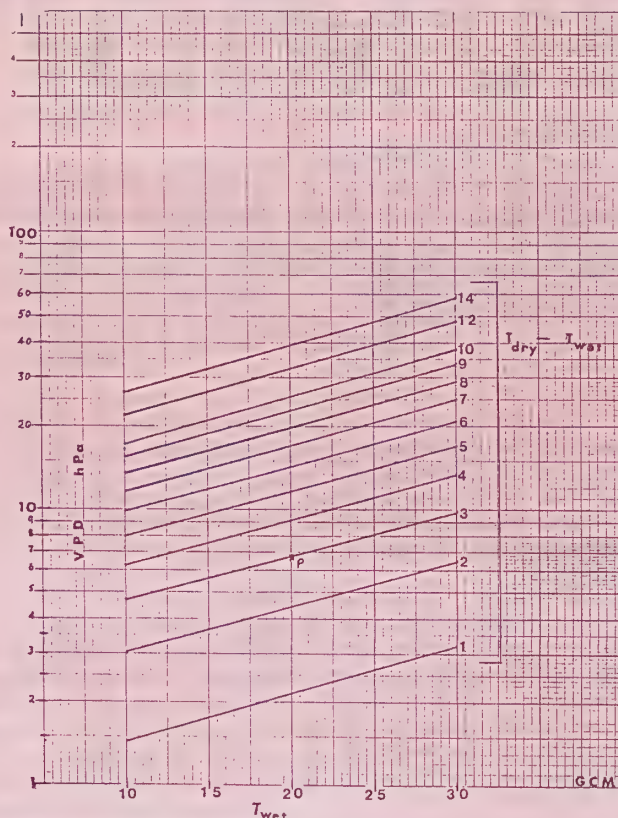
it is not necessary to state at what temperature this is relevant. If the optimum VPD is 15 hPa then this is to be 15 hPa at any biological temperature prevailing.

The obvious question now arises "what is the optimum VPD for each orchid genus?" Regrettably little work has been done on this subject except for *Paphiopedilum* (Williams, Grivet and Zeiger 1983 and Mayo and Ehret 1980).

This work was largely initiated because plant physiologists were intrigued by the lack of chloroplasts in the guard cells of *Paphiopedilum* (Nelson and Mayo 1975) It is most unusual for plants to lack chloroplasts in this location. As some albino barley plants lacking these chloroplasts also lacked stomatal movement it was concluded that guard cell chlorophyll is necessary for stomatal functioning (Shaw 1958).

Data from Williams et al (1983) who worked with *Paphiopedilum insigne*, in daylight, found that, at an ambient temperature of  $20^{\circ}\text{C}$ , maximum net photosynthesis occurred up to a VPD of 5 hPa but then dropped sharply by 33 per cent when the VPD increased to 10 hPa and continued to drop with increasing VPD values. The stomatal conductance also fell as the VPD increased so minimising water loss from the plant.

Mayo and Ehret (1980) working with *P. leeanum* found that by increasing the



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VPD from 4.75 hPa to 30 hPa the transpiration increased by 274 per cent and the relative water content of the leaves decreased by 7.5 per cent. Although not providing numerical data Williams et al (1983) state that *Cymbidium* and *Phragmipedium* exhibited comparative stomatal conductance values to *Paphiopedilum*. Just how comparable and under what conditions will have to wait publication of the data.

Many epiphytic tropical orchids use CAM (Crassulacean Acid Metabolism) to fix carbon dioxide and stomata are open at night (Avadhani, Khan and Lee 1978 and Goh, Avadhani, Loh, Hanegraaf and Arditi 1977). VPD is normally critical during the period of open stomata and at night the  $T_{dry} - T_{wet}$  values are lower hence the VPD is lower at night. Perhaps with genera such as *Cattleya*, *Arachnis*, *Aranda*, *Aerides*, *Vanda* and similar, all being reported to have CAM, the daylight VPD may not be as important as the night time VPD when low values should be easily obtainable.

Working in dry rain forest near Armidale NSW in November Wallace (1986) found that the VPD around some plants of *Dendrobium speciosum* (a CAM plant) increased to around 30 hPa from 1400 to 1800 hours. *Plectorrhiza tridentata* (also CAM) was surrounded by a VPD of about 17 hPa at similar times. yet in both cases the VPD during the period 2100 hours to 0900 hours was less than 5 hPa. The high VPD during the daylight hours would cause severe water loss to plants in the open, particularly those with little water storage capacity like *Plectorrhiza tridentata* hence the ability to close the stomata during high VPD conditions enables these plants to survive in dry conditions ●

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# Cymbidium suave

*Cymbidium suave* is the smallest of the three cymbidium species found growing in Australia and it differs from the other cymbidium species, namely, *Cymbidium madidum* and *Cymbidium canaliculatum* in that it has no, or to say the least, very little pseudo bulbs, and as it grows it forms a long elongated stem. The base of which is covered with dead husks of the old leaves.

The growth continues from the one stem over a period of years. New growth will also appear from around the base of the plant. These stems will vary from about 5cm to 35cm long because they are covered with the dead husks, they present an untidy appearance.

The leaves of *Cymbidium suave* are very narrow or grass-like in appearance, very flexible and vary in length from about 15cm to 45cm. Each stem carries up to 15 leaves, which are generally a dark green colour.

The flower racemes appear from the bottom leaves and are generally pendulous with numerous flowers, closely packed, slightly concave and ranging in colour from apple green, light green, golden green or brownish green and sometimes splashed with reddish patches. They vary greatly — on the south coast of NSW, in the Nowra district, flowers of *Cymbidium suave* are generally of a brownish-green colour.

The habitat of *Cymbidium suave* ranges from the south coast of NSW, north to northern Queensland. It is epiphytic and is generally found growing in hollows in its host tree. In the Nowra district, of southern NSW it is found growing in the open forest in or on hardwood trees (Eucalypts), sometimes growing into quite large clumps. It can be found growing in the stumps of felled trees, from a few feet above the ground to high in the branches of living and dead trees, 30 to 40 feet up.

We also find fine specimens, thriving on *Melaleuca* trees growing in swampy areas and along creeks. In the hardwood trees, especially the dead ones, the plant will send roots down through the dead centre of the tree and very often they will reach extraordinary lengths. On the *Melaleuca* trees, the roots penetrate under the paper-like bark for considerable distances.

Propagation of the species is by the production of long adventitious growths which will produce a plant at each knot hole or crack in the tree trunk.

## CULTIVATION

The general opinion among orchid growers is that this species is hard to grow. It appears to thrive for a short time and then gradually die back. Personally I have, so far, had no bad results with the three plants I am growing.

I also know of two large specimens, growing in the yard of a friend's home, in the Jervis Bay area, that are at least 15 to 20 years old. They are growing in two old stumps and have been shifted at least twice into other locations which necessitated cutting the roots which penetrated into the ground below.

I have three plants, one in a stump about 1 metre long by about 20cm in diameter, the second in a stump about one-third of a metre long by about 25cm in diameter and the third in a terracotta pot, 225mm in diameter. Plant one was planted, as a single plant, in the stump about 7 years ago. Plant two was grown from two adventitious growths produced by plant three when it was in a plastic pot. This plant is now about four years old. Plant number three was purchased from a nursery in the Wauchope district about six years ago. Its age I cannot guess — It was then in a 200mm plastic pot and it really needed repotting.

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However this chore was delayed and the following year two new growths appeared through the drainage holes in the pot. Apparently the plant had sent down two adventitious growths which produced the new plants. At the time of repotting the plastic pot was cut to enable the two new growths to be removed without damage. They were then planted in the small hollow log. The parent plant I repotted in the terracotta pot. All three specimens are in good condition with new leads appearing in each.

The compost used to grow this species consists of: approximately  $\frac{1}{4}$  rotted material from the centre of a fallen eucalypt tree;  $\frac{1}{4}$  fine charcoal;  $\frac{1}{4}$  fine pine bark;  $\frac{1}{4}$  cymbidium compost (sawdust base).

The plants are housed in the bush house under 50 per cent shade cloth and are watered only to keep them barely moist. Once a year I place a slow release fertilizer just under the surface of the compost and in the spring a little blood and bone is sprinkled around the plant. An occasional spray with malathion is all that is necessary to eradicate scale brought by ants ●

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# Cymbidium Peter Pan 'Greensleeves'

R.W. Nicolle

*Cymbidium* Peter Pan 'Greensleeves' (4N) is proving to be a most significant hybrid for extending the flowering time of *Cymbidiums*.

*C. Peter Pan* is a hybrid produced by crossing the intermediate size, fragrant, Chinese species *C. ensifolium* with *C. Miretta*. This cross was probably first made back in the early 50s and was registered with the Royal Horticultural Society in 1957 by Dos Pueblos Orchid Company of California. *C. Peter Pan* was known to be a fragrant cross, however, *C. Peter Pan* 'Greensleeves', the most famous variety from the cross is not one of the more fragrant.

*C. Peter Pan* 'Greensleeves' flowers in the Southern Hemisphere between early February and late May. It is a relatively vigorous variety with erect stems, a pleasing green colour and is often the only *cymbidium* in flower at that time of year. If you wanted to pick a bad point, it would probably be that the flowers do not last well when the spike is cut.

However, since there are no better *cymbidiums* flowering at that time of the year, it is hardly worth mentioning.

Taking all of the features of *C. Peter Pan* 'Greensleeves' into account you could not be blamed for wondering why there was only one cross registered with *C. Peter Pan* as a parent during the twenty two years after 1979 (see table figure 1). The only cross made was by Rod McLellan Company of San Francisco in 1966, *C. Peter Pan* x *C. Apollo* = *C. Peterpol*. The reason for the lack of registrations was not lack of activity. I am sure hybridists all over the world were striving to produce hybrids with *C. Peter Pan*, however, in the diploid (2N) form which resulted from the Dos Pueblos cross, *C. Peter Pan* was very reluctant to breed. In the early 70s the colchicine induced tetraploid (4N) form of *C. Peter Pan* 'Greensleeves' appeared and was found to be fertile. In 1979 the first crosses with *C. Peter Pan* 'Greensleeves' (4N) were registered:—

- x *C. Peetie* = *C. Autumn Green* by Kawano
- x *C. Stanley Fouraker* = *C. Princess Buttons* by Santa Barbara
- x *C. Sweet Spring* = *C. Jade Willow* by Stewart Inc.

In the years following until the present time there has been an avalanche of *C. Peter Pan* crosses with over 50 registrations. With these new crosses the hybridists have been rewarded with plants flowering between March and June in a wide range of colours, some with fragrance, some with long lasting blooms when cut and a small minority producing almost standard size blooms. The good characteristics of *C. Peter Pan* 'Greensleeves' have mostly been retained including a reasonable ability to flower in warmer climates.

There are probably many more *C. Peter Pan* 'Greensleeves' (4N) hybrids in the pipeline that have not yet flowered and been registered. There is also a large number of second generation hybrids being made and already a few have been registered. These second generation hybrids are still carrying through the attributes introduced by *C. Peter Pan* 'Greensleeves' (4N) and appear to have overcome the few minor problems.

*C. Peter Pan* has been used in just one intergeneric cross. *C. Peter Pan* x *Ansellia africana* = *Ansidium Magic Wand* ●

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- M156 Blc. **EMPRESS WORSLEY** 'Roman Holiday'  
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- M160 Blc. **MOUNT TRIUMPH** 'Wing Tip' AM/AOS  
Excellent yellow with red tips on petals.
- M164 Blc. **TOSHIE AOKIE** 'Pizazz' AM/AOS  
Large yellow with red labellum and splashes
- M167 Blc. **JANELLE TOKUNAGA** 'Pokai'  
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# Cymbidium Peter Pan Hybrids

REG. NAME	POD PARENT	x	POLLEN PARENT	REGISTRANT	DATE
ANCIENT	PETER PAN	x	MATANA	VALLEY ORCH (O/U)	MAY 86
AUTUMN FIRE	CHIEF JOSEPH	x	PETER PAN	GEYSERLAND ORC	MAR 84
AUTUMN GREEN	PETER PAN	x	PEETIE	KAWANO	1979
CALIPAN	CALIGOLD	x	PETER PAN	STEWART'S	DEC 85
CUTESIE	<i>ensifolium</i>	x	PETER PAN	EVERGLADES	SEP 83
DEAR LISA	AMESBURY	x	PETER PAN	SANTA BARBARA	APR 82
DOC. SHARON CONROW	PETER PAN	x	LOCH LOMOND	SANTA BARBARA	FEB 81
DYNA-MITE	SWEET DREAMS	x	PETER PAN	EVERGLADES	JUN 87
ELANORA	PETER PAN	x	MELINGA	SHERRINGHAM (BORTHWICK)	MAY 85
EVERGLADES	PARISHII	x	PETER PAN	EVERGLADES	DEC 81
EVERGREEN	SIEMPRE	x	PETER PAN	EVERGLADES	NOV 85
FLORAL DANCE	PETER PAN	x	MAGPIE	GEYSERLAND ORC	AUG 86
FLYING HIGH	CANTERBURY TALES	x	PETER PAN	R McLELLAN'S	AUG 86
GAVESTON	YGRAINE	x	PETER PAN	MILLER COLL	JUL 82
GREEN BAY	MINETTE	x	PETER PAN	GEYSERLAND ORC	MAR 84
GREEN DELIGHT	PETER PAN	x	JILL	VALENTINE R	MAY 86
GREEN GLADES	GAINESVILLE	x	PETER PAN	EVERGLADES	AUG 82
HAMANA	PETER PAN	x	LUNAGRAD	TAKAIT	NOV 81
HEAVENLY SCENT	PETER PAN	x	<i>tracyanum</i>	FEATHERHILL	FEB 82
JADE WILLOW	PETER PAN	x	SWEET SPRING	STEWART INC	1979
KAULANI	MIMI	x	PETER PAN	ROWLAND'S	AUG 87
KIWI RUBRA	VIA RUBRA	x	PETER PAN	GEYSERLAND ORC	MAY 85
KIWI VOLCANIC	MEM DOCTOR BORG	x	PETER PAN	GEYSERLAND ORC	MAY 85
KORIPAN	KORINTJI	x	PETER PAN	STEWART'S	FEB 82
LAST CHANCE	KURUN	x	PETER PAN	FEATHERHILL	FEB 82
LOVEBIRD	BETHLEHEM	x	PETER PAN	ROWLAND'S	AUG 87
MAGIC DUST	PETER PAN	x	GYOKUCHIN	ROD McLELLAN	OCT 84
MAUREEN GRAPES	SUSSEX MOOR	x	PETER PAN	GEYSERLAND ORC	MAR 84
MEM EMMA MENNINGER	PETER PAN	x	<i>suavissimum</i>	GEYSERLAND ORC	SEP 83
MESA ZIA	PETER PAN	x	JOLITY	McCULLOCH W L	APR 82
MINI CINNAMON	PETER PAN	x	SLEEPING CASTLE	VALLEY ORCHIDS	DEC 83
MINI GODDESS	PETER PAN	x	SLEEPING DREAM	VALLEY ORCHIDS	DEC 83
MINI LADY	PETER PAN	x	SLEEPING BEAUTY	VALLEY ORCHIDS	DEC 83
MINI VERD	PETER PAN	x	WYANGA	VALLEY ORCHIDS	DEC 83
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MOYRA EASTON	KING ARTHUR	x	PETER PAN	FEATHERHILL	AUG 81
PETER DRAGON	PETER PAN	x	PENDRAGON	ROWLAND'S	AUG 87
PETER PILOT	PETER PAN	x	FRED STEWART	GEYSERLAND ORC	SEP 83
PETERPOL	PETER PAN	x	APOLLO	ROD McLELLAN	1966
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PRINCESS BUTTONS	PETER PAN	x	STANLEY FOURAKER	SANTA BARBARA	1979
ROLLING STONE	PETER PAN	x	DORIS AUREA	GEYSERLAND ORC	OCT 86
STORMY WEATHER	LIGHTNING	x	PETER PAN	R McLELLAN'S	AUG 85
SUMMER NIGHTS	BALKIS	x	PETER PAN	FEATHERHILL	FEB 82
SUMMER PEARL	PETER PAN	x	TRIGO ROYALE	GEYSERLAND ORC	MAR 84
SUZUKAZE	PETER PAN	x	KATYDID	KAWANO	MAR 83
TEWKESBURY	GERAINT	x	PETER PAN	MILLER COLL	AUG 82
WARM WATERS	NILA	x	PETER PAN	EVERGLADES	AUG 82
WENDY	WONDAH	x	PETER PAN	WHITCOMBE I & E	AUG 87
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# DISEASES OF ORCHIDS OF NORTH EAST INDIA

Gyatri Barua, Mala Devi, P.C. Deka and P.K. Dutta

Dept. of Plant Breeding and Genetics

Assam Agricultural University

Jorhat 785 013, India

Dept. of Plant Pathology

As many as 990 species in 145 genera of orchids have so far been recorded in India (Jain, 1983). The north east of India is very rich in natural orchid flora and more than 600 species have so far been reported. There are few reports on diseases of orchids (Butler and Bisby, 1960; Ponnappa, 1968; Duarte, 1972; Prakash and Singh, 1975; Ito and Aragaki, 1977; Roy and Barman, 1979; Roy, 1979). The present reports are new addition of orchid diseases recorded in north east India.

## Black spot of *Arundina graminifolia*

Black spot disease on *Arundina graminifolia* was recorded in August 1986 at Dawki, Meghalaya, India.

The disease appeared as black dots on the older leaves. The spot enlarges and develop into big spots with greyish centre, surrounded by black margin. In advance stages disintegration of the central tissue takes place. Enlarged spots measure 1-2cm. The casual organism was identified as *Hendersonula toruloides* Nathras and confirmed by CMI (Herb. IMI No. 2999880).

## Brown rot of *Cymbidium longifolium*.

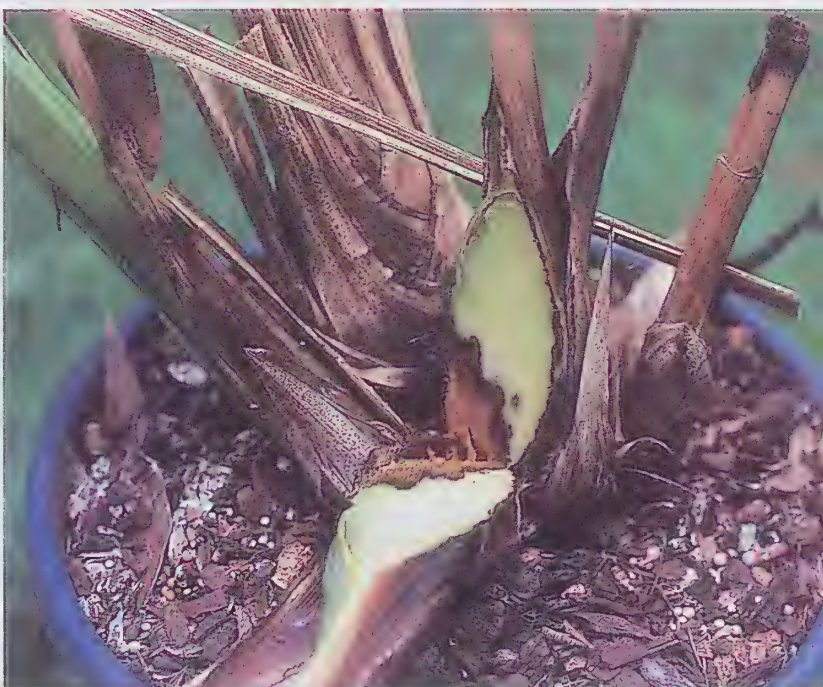
Brown rot of *Cymbidium longifolium* was observed at Digboi, Assam, India in July, 1986.

Symptoms developed in chlorotic light brown patches on the leaves. In due course the patches coalesce and the whole leaf turn dark brown. The disease spreads rapidly and infects the stems. In very advanced stages the plant collapses. The casual organism was identified as *Paecilomyces lilacinus* (Thom) Samson and confirmed by CMI (Herb. IMI No. 299884).

## Brown spot disease of *Dendrobium densiflorum*.

Brown spot disease of *Dendrobium densiflorum* was recorded in July 1986 at Arunachal Pradesh, India.

The disease appeared as hay coloured ring-like spots of about 0.5 to 2mm in diameter on the upper surface of leaf. Leaves turn brownish gradually. In advance stages spots coalesce to form large patches. The casual organism was identified as *Alternaria alternata* (Fr.) Keissler and confirmed by CMI (Herb. IMI No. 299885).



*Phytophthora* spp attacking a *Cymbidium* plant. Note area on pseudobulb infected with the fungus.

## Black spot disease of *Dendrobium fimbriatum*.

Black spot disease on *Dendrobium fimbriatum* was recorded in March, 1986 at Darrang district, Assam, India.

The disease appeared in black spots of about 1-2mm in diameter through the leaf randomly on both the surfaces. The leaf turns brownish and dried up in advance stages. Two organisms have been associated with this disease and were identified as (a) *Fusarium pallidoroseum* (Cooke) Sacc. (Herb. IMI No. 299886a) and (b) *Curvularia affinis* Beedijn (Herb. IMI No. 299886b).

## Acknowledgement

Financial assistance received from the Department of Environment and Forest, Government of India in the form of a research project is thankfully acknowledged. ●

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<b>White</b>	
Fancy Free 'Rotorua' x Trigo Royale 'C1'	June D
Fancy Free 'Rotorua' x Palace Court 'Royal Blush'	June B
Via del Playa 'Yvonne' x Fancy Free 'Rotorua'	July D
Via del Playa 'Yvonne' x Charles Toovey 'Princess Lauren'	July C
Fancy Free 'Rotorua' x Charles Toovey 'Princess Lauren'	July C
Winter Wonder 'Icicle' x Fancy Free 'Rotorua'	July B
<b>Pink</b>	
Red Beauty 'Carmen' 4N x Trigo Royale 'C1'	May D
Red Beauty 'Carmen' 2N x Red Beauty 'Mieke' 2N	June A
Via del Playa 'Yvonne' x Trigo Royale 'C1'	June C
Via del Playa 'Yvonne' x Fancy Free 'Stanwell Cottage'	July B
Robert Rowe 'No 1' x Lancashire Rose 'Maureen' 4N	Sept A
<b>Yellow</b>	
(Winter Wonder x Lunara) 'Judy' x Trigo Royale 'Sunny'	Jun B
(Coraki x Trigo Royale) x Valley Angel 'Foxfire'	June A
(Winter Wonder x Angelica) 'Neville' x Coraki 'Margaret' 4N	July A
(Winter Wonder x Angelica) x (Winter Wonder x Lunara)	July A
(Valya Craig x Coraki) 4N x (Winter Wonder x Lunara)	Sept A
<b>Red, Orange and Sunset</b>	
Red Beauty 'Carmen' 4N x Trigo Royale 'Sunny'	May A
(Coraki x Trigo Royale) 4N x Red Beauty 'Princess Fredricka' 4N	June D
Red Beauty 'Princess Henriette' 2N x (Coraki x Trigo Royale)	June A
Red Beauty 'Carmen' 4N x (Winter Wonder x Angelica) 'Neville'	July D
Red Beauty 'Carmen' 4N x Robert Rowe 'No 1'	July D
(Wallacia x Terama) 'Desert Fire' x Lancashire Rose 'Maureen' 4N	July B
(Yowie Flame x Sleeping Dream) x Claude Pepper 'Rotorua'	July A
(Wallacia x Terama) 'Desert Fire' x Robert Rowe 'No 1'	Sept B
(Valya Craig x Coraki) x Claude Pepper 'Rotorua'	Sept C

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Everglades 'White' x Trigo Royale 'C1'	April A
Everglades 'Pink Tower' x Gardalvin 'Tiny'	May A
(Olymilum x Pendragon) x Fancy Free 'Rotorua'	June A
(Olymilum x Pendragon) x Via del Playa 'Yvonnee'	June A
(Dolly x Alegria) x Palace Court 'Royal Blush'	June A
Pendragon 'Broadmoor' x Fancy Free 'Stanwell Cottage'	June A
Music Box Dancer x (Dolly x Alegria) 'Mt Everest'	July A
Music Box Dancer x Charles Toovey 'Princess Lauren'	July A
(Dolly x Alegria) x Charles Toovey 'Princess Lauren'	July A
<b>Pink</b>	
Everglades 'Pink Tower' x Red Beauty 'Mieke'	May A
Everglades 'Pink Tower' x (Sue x Rincon) 'Pink Orb'	May A
Everglades 'Pink Tower' x Pink Peach 'Lollypop'	April A
Allison Shaw 'Valentine' x Trigo Royale 'Sunny'	June A
(Dolly x Alegria) 'Natalie' x Red Beauty 'Mieke'	June A
Alison Shaw 'Valentine' x (Dolly x Alegria) 'Natalie'	July A
<b>Yellow</b>	
Elsie Sanderson 'Fetherhill' x (Valya Craig x Coraki)	July A
(Cariga x Tom Thumb) 4N x (Valya Craig x Coraki)	July A
<b>Red, Orange and Sunset</b>	
Winter Fire 'Satsuma' x Red Beauty 'Princess Caroline'	June A
Kath Nicholson 'Ginger' x Red Beauty 'Princess Fredericka' 4N	July C
Claude Pepper 'Orange' x (Cariga x Tom Thumb) 4N	July A

### COMMUNITY POT PRICES

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- In addition to the crosses above we have over 100 cymbidium crosses in community pots, 3", 5" and 7" pots featuring such parents as Maureen Grapes, Claude Pepper, Peter Pan 'Greensleeves' 4N Second generation Peter Pan hybrids, Sue 'Waitohu', Pink Peach, Fancy Free, Via del Playa, Rolling Stone, Summer Pearl, Winter Paradise, Coraki 'Margaret' 4N, Yowie Flame, Radiant Harry and Solana Rose. These crosses are available in small numbers, no listings are available and plants are available only by personal visit to the nursery.
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# THE CAIRNS ORCHID CONNECTION

The last five years has seen a remarkable change in the Cairns Orchid Scene — new faces, new places, new international airport with two flights a week to and from Honolulu and the US mainland, and soon to see a once weekly flight to and from Japan.

The best time to visit is peak flowering, which is for the Autumn bloomers, the end of April and a month each side, and for the Spring Bloomers, that is the Phalaenopsis etc, the end of October and a month each side.

The North Queensland Orchid Society, Cairns meets on the second Monday of each month, except January, at 8pm at the Cairns Education Centre on the corner of Lazarus and Morehead Street, Bungalow. The society conducts two shows each year — at Westcourt Shopping Plaze each Mothers Day weekend and at the Cairns Agricultural, Pastoral and Mining Association Annual Show in July. The Mareeba Orchid and Pot Plant Society usually hold their show on the weekend before Mothers Day.

When in Cairns, the places to see orchids are:

Roy Down (Nevens Nursery), a large

commercial nursery, has mostly Cattleya seedlings to flowering plants and mericlones as well as some Phalaenopsis and Dendrobiums etc.

Lonnes commercial nursery specialising in local and imported species from around the world, and hybrids.

Limberlost commercial nursery, one of the first orchid nurseries in Cairns, has mostly foliage these days but still has quite a scattering of general orchids and imports.

There are also many good sized private collections where it is possible to purchase surplus plants.

David Hampton has a large collection of Cattleyas and some Phalaenopsis and Dendrobiums.

Hugh Fisher also has a large collection of Cattleyas and Dendrobiums.

Karen McFarlane has flasks and community pots.

You can look at a few select collections but they do not like to part with their plants.

Nick Linc has a nice collection of Dendrobiums with some very colourful crosses from the Latouria section and is well worth a visit.

Kevin McFarlane has a select collection of Dendrobiums, Phalaenopsis, Vandas and intergenerics.

Jack Meade usually has plenty of orchids in bloom — Cattleyas and Dendrobiums.

There are many others almost as large, enquiries should be made with your host about other collections in the immediate area.

D'Bush commercial nursery is about a 40 minute drive up the Kuranda range towards Mareeba. They have mostly Dendrobiums, Mini-Dendrobiums, Cattleyas, Phalaenopsis and Vandas. They have created the interesting Dendrobium they call the "Pansy Orchid", as it closely resembles a Miltonia in shape — most unusual.

Saturday morning is a special event at Rusty's Bazaar, Sheridan Street, Cairns. You can see anything from nine to a dozen vendors selling orchids from 6am to midday. This is an exciting occasion as the orchid displays are scattered amongst dozens of other displays of fruit, vegetables, craft, shellware, T-shirts — you name it! Bus loads of orchid enthusiasts

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Adelaide Orchids Pty. Ltd. is moving to a smaller site at Woodcroft, South Australia, where they will specialise in Miscellaneous Orchids and some Cymbidiums.

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from as far as Mackay are becoming regular sights at Rusty's.

For out of town "The Orchid Circle" is strongly recommended, as almost any type of orchid can be seen during a leisurely 4½ to 5 hours of driving time, allowing for stops.

From Cairns, drive south on Highway One, turn right at Gordonvale on to the Gillies Highway. Continue until the Little Mulgrave where you will see a sign Orchid Valley. This rather new establishment has a beautiful garden setting that has been professionally landscaped. Susan and David Collier have two large orchid houses 200' x 30' with one open to the public. There are usually masses of orchids in bloom to choose from, mostly imported from Hawaii, Thailand and other countries. They are very helpful, if they do not have what you want they will endeavour to get it for you.

Return to the Gillies Highway and continue to Tinaroo Orchids approximately a one hour drive from Orchid Valley. Gordon and Ray Matthews have a tourist establishment and have carried out a lot of improvements. Here you will see cold and warm growing orchids growing side by side. Phalaenopsis, Hard Cane and Soft Cane Dendrobiums, Miltonias, Paphiopedilums, Vandas etc. If you see something that catches your eye, do not be afraid to ask — they do sell.



A large and colourful group of Phalaenopsis from the author's collection

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From Tinaroo it is just a half hour drive to Mareeba to visit Jim and Bev Allen. They have an interesting collection of standard and novelty Cattleyas.

A three quarter hour drive out along the Cooktown road takes you to Maryfarms. Look for the sign on the right hand side of the road Lloyd McFarlanes Orchid Barn. Lloyd has converted tobacco curing barns into orchid seedling houses, and also has a 100' x 30' sarlon shade house. The growing in this area is different to the coast, it is approximately 1200 feet above sea level and it is much drier. It is similar to the dry side of Hawaii, the Waianae area. This is the natural growing area of *D. canaliculatum*, *D. biggibum*, and *Cym. canaliculatum*. You can notice a difference in the growth pattern, the plants are more plump and tougher looking and the pigmentation of some plants is a burnt red colour. Recently a plant of *D. tetragonum* x *D. Debbie McFarlane* with 17 beautiful green blooms was very impressive. Lloyd says — "I only have one problem and that is trying to outgrow my old man — Kevin McFarlane."

From Maryfarms it is 1½ hours drive back to Cairns. Return to the Cooktown road turnoff and turn left towards Julatten and follow this road down the Rex range and along the scenic Cook Highway to Cairns. Make one more stop on the way at Clifton Beach to see





Semi-terete Ascocendas growing outdoors in Cairns

Cairns Orchid Centre. George and Val Valmadre are very helpful and will offer you good advice. George is one of the newcomers on the orchid scene, but he is wasting no time in building up his nursery to be one of the largest in Cairns, concentrating mainly on Dendrobiums but is also moving into Cattleyas.

If you have not secured a unique, selected collection of plants by now you would be hard to please.

Before visiting, a courtesy telephone call is always advisable especially to private growers as most of them work during the week. It would probably be a good idea to see the commercial growers during the week and the private growers at the weekend.

Telephone numbers are:

Roy Down	54 1201
Lonne's Nursery	54 1746
Limberlost Nursery	55 1262
David Hampton	54 1660
Hugh Fisher	54 4585
Karen McFarlane	55 4751
Kevin McFarlane	53 1868
Jack Meade	51 3432
D'Bush Nursery	93 7923
Orchid Valley	56 1727
Tinaroo Orchids	95 8223
Jim & Bev Allen	92 1064
Lloyd McFarlane	94 3163
George & Val Valmadre	55 3224

Have a happy visit!

(contributed by K. McFarlane)

## Maxillacaste

In September 1982 we made a most interesting cross of *Lyc Koolena* x *Maxillaria*. There was very little seed in the pod and unfortunately only a few seedlings survived. Imagine our delight when in September last a spike appeared on one of the seedlings.

We watched with great anticipation and at the end of the month the flower burst fully open overnight — an amazing gem! colour and shape — interesting!

We believe this to be the first time a similar cross has been made in Australia. On checking the last two editions of Sander's registrations only the name *Maxillacaste* was listed whereas in an earlier edition two registrations were recorded in 1974.

The pollen has already been used and we look forward to the next generation.

A. F. W. and D. M. Alcorn.





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Tuck'**

Polychrome green/red intermediate with solid red lip. Suits hanging basket.

**Cym. Mini Splendour 'Red  
Dragon' 4N**

Dark red miniature blooms in April and again in October.

**Cym. Arunta 'Will-O-Wisp'**  
Showbench quality golden brown intermediate blooms.

**Cym. Yankalilla 'Mandurang'**  
Pure color green miniature flowers on long arching spikes.

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# IT'S IN THE GENES

## Young Speakers at the 11th Aust. Conference

How refreshing it was to hear two young Australian orchidists speak at the 11th Australian Conference at the Sydney Town Hall.

On the first day we were able to hear the 23 year old David Banks speaking off the cuff with conviction knowledge and sound practical experience on hybridising with the Australian Native Dendrobium. While the information was enlightening, one could not but wonder at so much information coming from one so young. But the Sydney growers were quick to point out that David had been involved with his family and orchids from birth and had his very own orchids from the age of five. It was in his genes.

On the second day of the lectures it was my privilege and delight to introduce the first speaker of the day — Karen (McFarlane) Tickner. Like David, Karen most likely saw her first orchid as she looked up from the crib in hospital and smiled so disarmingly — who will forget that smile as Karen named her honeymoon party.

As a new young speaker with a definite message Karen is the type of speaker that societies need to stimulate younger people to grow orchids. Her paper was compiled in association with her dad, Kevin, and was entitled "The pursuit of excellence in Hardcane Dendrobium breeding".

Apart from some pre-starting nerves Karen presented the paper and handled the questions at the end of the lecture like a veteran. The paper was well researched and supported with excellent slides and Karen certainly deserved the sustained applause.

Again it was in the genes.

At all orchid conferences their must be a place for scientific lectures. But let's face it, the scientific lectures appeal to perhaps 5 to 10 per cent of the registrants while down to earth lectures with a definite message are appreciated by most registrants.

Personally I hope to hear a lot more from David and Karen; and Auckland in 1990 would seem to be a must.



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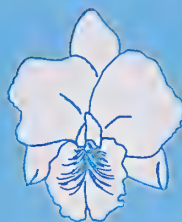


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- Phal. Sarah Loeb x P. Romance 'Sweet Lisa' — pinks
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- Blc. Yellow Ball 'Sunshine' x Blc. Sylvia Fry 'Wallacia'
- C. intermedia alba 'Casa Luna' strain — species
- C. guttata alba x self — species
- L. pumila 'Black Diamond' — mericlone 4 plants
- Blc. Bouton D'Or 'Lewis' x Slc. Hazel Boyd 'Royal Scarlet'
- Blc. Yellow Ball 'Sunshine' x Blc. (Tiara x Bouton D'Or)
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Closeup of the pouch of *P. sanderianum* showing the nectar droplets which are produced from within the pouch wall.

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# The Unique Pollination of *Paph. sanderianum*

Text: R.D. Kramer

Photography: Salvador Castelo

The mechanics of pollination within the Genus *Paphiopedilum* have been little studied due mainly to the inaccessibility and remoteness of the habitats. Dr J. Atwood of the Marie Selby Gardens studied *Paphiopedilum rothschildianum* in its habitat thus discovering that a species of syrphid fly was attracted by the staminode which resembled a colony of aphids on which the species larvae feed (known as Brood site deception).

Not in any literature could I find any *paphiopedilum* which actually secreted nectar to enhance pollination. *Paphiopedilum sanderianum* is the only species in this genus that I know of, that actually secretes nectar. The observations outlined below clearly place *Paphiopedilum sanderianum* as totally unique from the other members of the Genus.

It has been a well known fact that Orchids have used visual and olfactory

mechanisms to lure and deceive their pollinators, rarely if ever offering them any reward. Most insects view flowers only as a means of eliciting food. *Paphiopedilum* species have been studied mainly in cultivation and observation can be merely speculation, however, I feel that when supported with logical argument, the actualities of the events are not as far fetched as first may have been thought.

*Paphiopedilum sanderianum* is still very rare in cultivation and was only as recently as 1979 rediscovered. This is the major factor why the species has not been extensively studied. Observations have now been recorded on plants of this species, which reveal that the plant produces nectar from glands on the pouches' outer surface to possibly aid in the luring or attraction of pollinators. (Kramer 1988).

Why does this plant with equally as





The staminode also shows the small bristle like hairs which may have the same attractive powers as has been noted with *P. rothschildianum*.



The long petals of *P. sanderianum* possibly provide easy access of insects (particularly non flying types), to the nectar and pouch. The particular plant illustrated had petals 57cm long and four flowers.

## mechanism

bizarre a colours as any of the others species in this genus (if not more so), require the additional aid of nectar producing glands. Asher has stated that the light intensity of the area is extremely low, so visual attraction may only play a minor role in attracting the pollinator. Upon opening of the flower some three to four days elapse before the first signs of nectar are to be observed on the pouch and the entire surface is flecked with these droplets once the flower is fully open. At first it was thought that moisture from misting had fallen on the pouch so the droplets were meticulously dabbed off with a tissue. The first reaction was that these droplets appeared slightly glutinous. On returning some three hours later the droplets mysteriously reappeared. No watering had been done in the interim and their reappearance had me completely puzzled.

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The plant was then moved to a completely dry room and again the droplets were removed. A steady current of air was blown at the plant and inspected the next morning to again reveal the same mass of droplets. This totally dismissed the thought that the moisture came from misting. The same incredible observations were made on the successive three flowers again only in evidence after the flower had been open for about three days. Later experiments were then conducted to see if this moisture was attractive to ants which I thought would be the most likely pollinator. A species of Australian sugar ant was used and allowed to travel up the petals to the pouch which they did with ease and immediately took to the droplets. As water does not have the same attractive powers to these insects as does nectar, one can completely discount the former.

The kind of insects that are actually the pollinator of *Paphiopedilum sanderianum* may be a composite of species. The bizarre colour combinations would stimulate species which have a keen eyesight, which definitely rules out ants, however, the nectar which has a sweet taste would favour either bees, flies or ants. Obviously the plant has evolved this additional syndrome (apart from the gaudy colour scheme), to maximise pollination in the minimum time period.

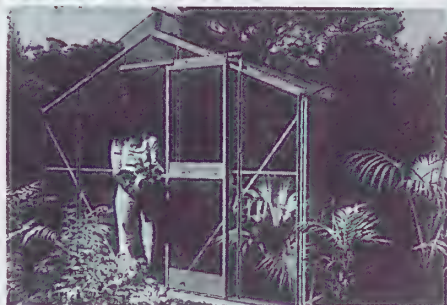
The nectar itself is worth comment and later considerable chemical analysis will be carried out in determining both the composition of the nectar and also why the pouch doesn't rot when approximately 40 per cent of its surface is covered most of its open days. As most Paph growers have seen even small droplets of water can cause surface damage and at worst start major rotting of the complete pouch. This was the most remarkable factor of the nectar. Nature would not have a plant evolve a substance which would damage the only receptacle which would house the pollinator, and eventually guide it to the pollinia.

To add further emphasis to my previously held belief that the nectar was only a pollinator attractant, shortly after the flower was pollinated the nectar supply dried up within 36 hours. Those flowers that remained unpollinated continued to exude the nectar.

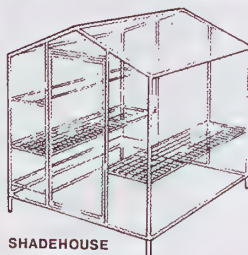
These observations, I believe, show that *Paphiopedilum sanderianum* is the only *Paphiopedilum* species so far discovered, which actually has nectar producing glands within the pouch wall, and in fact the only nectar producing *Paphiopedilum* known. Again I strongly believe that with further studies in the field the exact pollinators will also be revealed. ●

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# A TABLE OF ORCHID SEED — CAPSULE AGES

Part Two — Xotic Species and Hybrids

This table should be read in conjunction with the text of Part One  
(AOR Autumn '88) ALAN ENGLERT

NAME	IMMATURE SEED- CAPSULES	RIPE (SPLIT) CAPSULES
	AGE-DAYS DAYS TO GERMINATION	AGE-DAYS
<i>Aerides</i> spp. & Hybrids	150-180	-
<i>Aerides fieldingii</i> x self	-	272
<i>Ansellii</i> spp. & hybrids	150-180	-
<i>Ascoecia</i> hybrids	120-190	-
<i>Ascoecium</i> spp. & hybrids	120-200	-
<i>Brassavola cucullata</i>	75-80	-
<i>Brassavola nodosa</i>	70-75	-
<i>Brassia</i> spp. & hybrids	450	-
<i>Broughtonia</i> spp. & hybrids	60	-
<i>Broughtonia sanguinea</i> x <i>Enc. vitellinum</i>	75	61
<i>Bulbophyllum</i> spp	-	-
<i>Chysis</i> spp	140-180	-
<i>Cirrhopetalum</i> spp	140-180	-
<i>Cirrhopetalum gusdorfii</i> x self	140-180	180
<i>Cirrhopetalum rothschildiana</i> x self	-	190
<i>Coelogyne fragrans</i> x self	-	-
<i>Cymbidium</i> hybrids	370	-
<i>Cyrtopodium</i> spp	220-300	-
<i>Dendrobium aureum</i> x self	150-270	26
<i>Dendrobium bigibbum</i> v. <i>bigibbum</i> x self	207	292
<i>Dendrobium bigibbum</i> v. <i>phalaenopsis</i> & hybrids	-	-
<i>Dendrobium chrysotoxum</i> x <i>chrysotoxum</i>	120-150	236
<i>Dendrobium devonianum</i>	-	-
<i>Dendrobium gouldii</i> x <i>phalaenopsis</i>	160-250	-
<i>Dendrobium</i> (Kultana x <i>bigibbum</i> ) x <i>bigibbum</i>	55-60	Nil
<i>Dendrobium Lady Hay</i> x self	89	232
<i>Dendrobium luteiflorum</i>	-	-
<i>Dendrobium moschatum</i> x <i>suavissimum</i>	160-250	40
<i>Dendrobium nobile</i> & hybrids	167	-
<i>Dendrobium pierardii</i> & <i>pendulous</i> spp	200-220	-
<i>Dendrobium stratiotes</i>	180-210	-
	150-200	-
<i>Dendrobium superbiens</i> & hybrids	160-250	-
<i>Dendrobium superbum</i> & hybrids	160-250	-
<i>Dendrobium (taurinum x tokai) x undulatum</i> x <i>gouldii</i>	55-60	-
<i>Doritaenopsis</i> hybrids	90	-
<i>Doritis pulcherrima</i>	65-70	-
<i>Eneyclia atropurpureum</i>	150-180	-
<i>Eneyclia cochleatum</i> x self	229	-
<i>Eneyclia faustum</i> x self	208	20
<i>Eneyclia faustum</i> x <i>tripunctata</i>	208	20
<i>Eneyclia hanburyi</i> x <i>memorale</i>	-	161
<i>Eneyclia hanburyi</i> x <i>prismatocarpum</i>	-	256
<i>Eneyclia mariae</i> x <i>Rhyncolaelia digbyana</i>	157	21
<i>Eneyclia mariae</i> x <i>mariae</i>	-	213
<i>Eneyclia mariae</i> x S.L. Marriottiana	-	154
<i>Eneyclia memorale</i> x <i>C. bowringiana</i>	-	313
<i>Eneyclia memorale</i> x (L. Coronet x L.C. Fiery)	225	49
<i>Eneyclia memorale</i> x (C. loddigesii x L.C. Fiery)	225	62
<i>Eneyclia memorale</i> x <i>mariae</i>	225	62
<i>Eneyclia pentotes</i> x self	-	140
<i>Eneyclia prismatocarpum</i> x <i>radiatum</i>	-	273
<i>Eneyclia prismatocarpum</i> x self	-	108
<i>Eneyclia radiatum</i> x self	-	339
<i>Eneyclia radiatum</i> x self	258	-
<i>Eneyclia tampense</i>	70-75	-
<i>Eneyclia vitellinum</i> x self	-	90
<i>Ephemeranthera comata</i> x self	-	86
<i>Epicattleya</i> & hybrids	150-200	-
<i>Epidendrum</i> spp. & hybrids	120-150	-
<i>Epidendrum cooperianum</i> x self	-	109
<i>Epidendrum pseudopidendrum</i>	90	-
<i>Epidendrum stamfordianum</i> x self	-	111
<i>Galeandra baueri</i> x self	-	279
<i>Laelia anceps</i>	120-150	-
<i>Laelia cinnabarina</i>	110-120	-
<i>Laelia flava</i>	110-120	-
<i>Laelia gouldiana</i> x self	-	142
<i>Laelia gouldiana</i> x self	124	48
<i>Laelia harpophylla</i>	110-120	-
<i>Laelia milleri</i> x self	-	114
<i>Laelia perrinnii</i>	120-180	-
<i>Laelia purpurata</i>	120-180	-
<i>Laelia purpurata</i> x self	-	145
<i>Laelia rebescens</i>	120-150	-
<i>Laelia sincorana</i> x self	219	-
<i>Laelia tenebrosa</i> x self	-	332
<i>Laelia xanthina</i>	120-180	-
<i>Leochilus scriptus</i> x self	86	14

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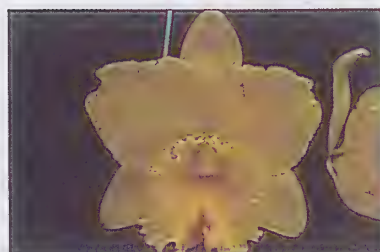




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# A TABLE OF ORCHID SEED — CAPSULE AGES

## Part Two — Xotic Species and Hybrids

NAME	IMMATURE SEED- CAPSULES	RIPE (SPLIT) CAPSULES
	AGE — DAYS DAYS TO GERMINATION	AGE — DAYS
<i>Leptotes bicolor</i> x self .....	-	134
<i>Leptotes unicolor</i> x self .....	185	-
<i>Lycasta edeniensis</i> x self .....	-	321
<i>Maxillaris</i> spp .....	120-140	-
<i>Miltonia</i> spp. & hybrids .....	120-140	-
<i>Miltonia spectabilis</i> x self .....	-	225
<i>Neofinetia falcata</i> x self .....	-	165
<i>Odontoglossum</i> spp. & hybrids .....	80-140	-
<i>Odontoglossum pulchellum</i> x self .....	196	-
<i>Oncidium altissium</i> .....	110-140	-
<i>Oncidium bahamense</i> .....	65-70	-
<i>Oncidium baueri</i> .....	110-140	-
<i>Oncidium carthagenense</i> .....	180-240	-
<i>Oncidium cavendishianum</i> .....	180-240	-
<i>Oncidium cebolleta</i> .....	110-130	-
<i>Oncidium equitans</i> hybrids .....	90-105	-
<i>Oncidium flexuosum</i> .....	110-140	-
<i>Oncidium jonesianum</i> .....	110-130	-
<i>Oncidium kramerianum</i> .....	90-120	-
<i>Oncidium lanceanum</i> .....	180-240	-
<i>Oncidium leucochilum</i> .....	110-140	-
<i>Oncidium limminghei</i> .....	90-120	-
<i>Oncidium lucayanum</i> .....	65-70	-
<i>Oncidium luridum</i> .....	150-180	-
<i>Oncidium maculatum</i> .....	110-140	-
<i>Oncidium microchilum</i> .....	130-170	-
<i>Oncidium papilio</i> .....	90-120	-
<i>Oncidium pubes</i> x <i>Rodriguezii</i> <i>gomesioides</i> .....	-	190
<i>Oncidium pulchellum</i> .....	65-70	-
<i>Oncidium retermeyerianum</i> .....	180-240	-
<i>Oncidium sanderi</i> .....	90-120	-
<i>Oncidium sphacelatum</i> & hybrids .....	120-140	-
<i>Oncidium splendidum</i> .....	130-170	-
<i>Oncidium stipitatum</i> .....	110-130	-
<i>Oncidium teres</i> .....	110-130	-
<i>Oncidium tetrapetalum</i> .....	65-70	-
<i>Oncidium triquetrum</i> & hybrids .....	150	-
<i>Oncidium urophyllum</i> .....	65-70	-
<i>Oncidium variegatum</i> .....	65-70	-
<i>Orchis morio</i> .....	25-40	-
<i>Paphiopedilum</i> spp .....	240-300	-
<i>Paphiopedilum insigne</i> v. <i>albomarginatum</i> x self....	-	348
<i>Phaius</i> spp. & hybrids .....	120-150	-
<i>Phaius tancarvillei</i> x self .....	-	254
<i>Phalaenopsis</i> spp. & hybrids .....	110-120	-
<i>Pleurothallis ghiesbreghtiana</i> x self .....	-	50
<i>Renanthera</i> spp. & hybrids .....	150-180	-
<i>Rehanthera</i> R.B. Chandler .....	70-75	-
<i>Rhynocaelia</i> spp. & hybrids .....	120-180	-
<i>Oncidium</i> spp. & hybrids .....	150-250	-
<i>Rhyncostylis gigantea</i> x <i>Renanstylis</i> Azimah .....	446	11
<i>Rodriguezia</i> spp. & hybrids .....	110-130	-
<i>Rodriguezia gomesioides</i> X <i>Oncidium pubes</i> .....	158	34
<i>Rodriguezia gomesioides</i> X <i>Oncidium pubes</i> .....	-	203
<i>Schomburgkia</i> spp. & hybrids .....	120	-
<i>Sophrontitis</i> spp. & hybrids .....	75-100	-
<i>Sophrontitis brevipedunculata</i> x self .....	138	Nil
<i>Sophrontitis cernua</i> x self .....	-	147
<i>Vanda burgei</i> .....	70-75	-
<i>Vanda (deari</i> x <i>sanderiana</i> ) x <i>V. suavis</i> .....	70-75	-
<i>Vanda</i> Margaret Foster .....	70-75	-
<i>Vanda</i> hybrids .....	150-195	-
<i>Vanda</i> Helen Paoa .....	70-75	-
<i>Vanda luzonica</i> x <i>sanderiana</i> .....	70-75	-
<i>Vanda</i> Patricia Lee x self .....	120-150	-
<i>Vanda</i> Patricia Lee x <i>Aseda</i> . Mem. Jim Wilkins. ...	90-150	-
<i>Vanda</i> species .....	150-195	-
<i>Vandopsis</i> spp. & hybrids .....	160-180	-
<i>Warszewiczella discolor</i> x self .....	-	163
<i>Xylobium squalens</i> x self .....	143	Nil
<i>Xylobium squalens</i> x self .....	-	233
<i>Zygopetalum mackayii</i> x self .....	223	-

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Margaret Martin

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This book contains more than 60  
colour photographs of various terrestrial  
and epiphytic Australian Native orchids.

The descriptive test is simplified and  
very easy to read without a large amount  
of technical data

The Cultivation note are simplified to  
the barest minimum, no propagation  
notes are included.

The book would be very useful for the  
beginner and could be used to identify  
the more commonly grown species.

### The Orchid Growers Manual

Gordon C. Morrison

Hard cover 247 pages

RRP \$29.95.

A very useful book for those orchid  
growers who wish to understand the

reasons why we carry out many of the  
growing techniques in orchid culture.

The book contains basic information  
which can be applied in the climatic  
zone in which the grower is resident.

Topics covered are basic measurement,  
classification and nomenclature, chem-  
istry, orchid structure and function,  
Solar Radiation, Plant climate relation-  
ships, Solar Movement, Orchid nu-  
trition, Photosynthesis, Respiration,  
Genetics and Experimental method.

Although it does not contain the usual  
photographs of orchids and culture etc, it  
would be invaluable to the thinking  
orchid grower who wishes to improve  
the conditions under which orchids are  
grown.

### An Introduction To The Orchids of Asia

Mark L. Williams

Hard cover 261 pp. RRP \$37.95

Published by Angus & Robertson 1988

An attempt is made to represent as  
many genera as possible in this book.

The colour photographs, especially  
those showing the plant growing in situ  
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grower.

Be careful using the photograph for  
identification as the one representing  
*Paph insigne* is not, it is probably a  
primary hybrid, this mistake also ap-  
pears on the jacket cover.

The text contains valuable information  
on the plants described. This informa-  
tion would be more valuable if the text  
stated epiphyte or lithophyte in habit,  
with information on temperature ranges,  
rainfall and whether a wet and dry  
season is experienced.

A very interesting section of the book  
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# THE NAMING OF INTERGENERIC CROSSES IN THE CATTLEYA ALLIANCE

Within the production of hybrids in the Cattleya Alliance appearing at an ever increasing rate not only is it becoming impossible to predict what a particular intergeneric hybrid cross will possibly look like but it is also becoming difficult to know what genera (group) have been used to produce the intergeneric cross.

It used to be rather simple, once one understood the process to know that, for instance if a *Laelia* and a *Cattleya* were crossed that the resulting intergeneric hybrid belonged to the *Laeliocattleya* group (abbreviation *Lc.*)

However when we consider a complex intergeneric cross like a *Hasegawaara* (abbreviation *Hasgw.*) which involves the crossing of five different genera, things are no longer as simple as they used to be. The five genera involved in producing a *Hasegawaara* are: *Brassavola* x *Broughtonia* x *Cattleya* x *Laelia* x *Sophranitis*. Simplified it could be a *Potnara* x *Broughtonia*.

By "generic" names we speak of which "genus", or group, particular orchids belong to e.g. the five genera (groups) listed previously which made up the intergeneric combination known as *Hasegawaara*.

When we look at a price list or a name tag, the group to which that plant belongs is shown first, e.g. a Capital C. followed by a full stop signifies that the plant belongs to the *Cattleya* genus or group. It could be either a species or a hybrid. If the name of the plant is shown correctly and it is a species the name would be printed in small letters (lower case) e.g. if the name tag shows *C. bowringiana* 'Purple King' we know the plant is *Cattleya bowringiana*, which is a species of the *Cattleya* genus or group and the name 'Purple King' in inverted commas after the name of the plant shows us that 'Purple King' is the cultivar epithet of *Cattleya bowringiana*.

On the other hand if the name tag shows C. Bob Betts 'York' — M/C we know the plant is the *Cattleya* genus, the name Bob Betts because it is not written in all lower case letters shows us the plant is a hybrid. The word 'York' in inverted commas shows us that that plant is cultivar or variety 'York' of C. Bob Betts. The M/C shown after the variety name shows us the plant is a mericlone or a meristem, and suggest this plant will flower identical to the plant of C. Bob Betts 'York' the meristematic tissue of the cultivar hav-

ing been used to produce these plants, thus the name.

C. Bob Betts is a hybrid produced as the result of crossing C. Bow Bells and *C. mossiae*. Some growers show the parents of the plant on the name tag as well. It is also a common practice although not technically correct to use the abbreviation of Cat. instead of just the letter C. for the abbreviation for *Cattleya*.

For those not familiar with the names of intergeneric crosses of the *Cattleya* alliance I think we should start with the four best known genera. (Genus is singular and genera plural e.g. *Cattleya* is a genus but *Cattleya* and *Laelia* are genera.)

The four best known genera and to understand intergeneric crosses it is imperative to know these genera and the abbreviation for each genus. These four genera are natural occurring genera.

(1) *Brassavola* — abbreviation is B. (Best known species in the *Brassavola* genus are perhaps *B. digbyana* and *B. nodosa*.) Whenever there is a B. in-

cluded in intergeneric name of an orchid we know that the genus *Brassavola* is included in the crosses which made the plant in question. Remember B. means *Brassavola*.

(2) *Cattleya* — abbreviation is C. (There are many well known species of this genus e.g. *C. aclandiae*, *C. amethystoglossa*, *C. aurantiaca*, *C. granulosa*, *C. intermedia*, *C. walkeriana* and many others. Whenever we see the letter C. in an intergeneric name we know that the genus *Cattleya* is included in the crosses which made the plant in question. Remember C. means *Cattleya*.

(3) *Laelia* — abbreviation is L. Some of the better known species of this genus are *L. pumila*, *L. purpurata*, *L. milleri*, *L. tenebrosa*. Whenever we see the letter L. in an intergeneric name we know that the genus *Laelia* is included in the cross which made the plant in question. Remember L. means *Laelia*.

(4) *Sophranitis* — abbreviation is Sophr. Some of the better known species

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of this genus are *Soph brevipedunculata*, *Soph. cernua*, *Soph. coccinea*. The abbreviation for the genus *Sophronitis* is *Soph.* As shown above, however when *Sophronitis* is included in a cross with a different genus or different genera, the abbreviation becomes only the letter *S.* e.g. we write *Slc.* for the abbreviation of *Sophrolaeliocattleya*, not *Sophlc.* Remember *Soph.* means *Sophronitis* when the genus is spoken of by itself and *S.* means *Sophronitis* when the genus is included in other genera.

Once these above four genera are understood we are well on our way to understand intergeneric crossing. Remember what *B.C.L.* and *Soph.* mean.

Until recent times practically all intergeneric crosses of the *Cattleya* alliance were made from crosses of these four genera. Over the past 10 or 15 years changes have commenced to take place and many more hybrids have resulted from some complex intergeneric breeding. Some well informed growers doubt if some of these complex crosses will ever flower owing to the complexity of the breeding of plants from different genera.

Let us now look at some crosses between the four genera we have looked at in detail so far. Let's start by crossing a *Brassavola* with a *Cattleya*. From this cross the resulting plants would belong to the *Brassocattleya* genus, abbrevi-

ation is *Bc.* (The *B.* is obtained from *B.* in the abbreviation from *Brassavola* and the *C.* is obtained from *C.* as in the abbreviation for *Cattleya*).

To progress further if we were to cross a *Brassavola* with a *Laelia* the resulting intergeneric name would be *Brassolaelia*, (abbreviation *Bl.*)

If we cross a *Brassavola* with a *Sophronitis* we get a *Brassophronitis*, abbreviation *Bnts.* (You don't see too many of those.)

Going a bit further if we cross a *Cattleya* with a *Laelia* we get a *Laeliocattleya* (abbreviation *Lc.*) or a *Cattleya* crossed with a *Sophronitis* produces a *Soprocattleya* (abbreviation *Sc.*)

I think we can now progress onto intergeneric crosses which contain three different genera. The most common crosses in this group are the *Brassolaeliocattleya* (abbreviation *Blc.*) made by crossing *Brassavola* x *Cattleya* x *Laelia*.

If we cross a *Sophronitis* with a *Brassavola* and a *Cattleya* the resultant cross is called *Rolfeara* (abbreviation *Rolf.*)

As we can see the intergeneric names are like building blocks, each time a different genus is included in a cross then that genus is included in the intergeneric name.

If those four genera and intergeneric

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crosses are understood we will progress one step further. If we have an intergeneric cross which includes all four of the genera we have been looking at, then this cross is called a *Potinara* (abbreviation *Pot.*) To breed a *Potinara* the parentage of the two plants used in them must somewhere in their background contain the four genera, *Brassavola*, *Cattleya*, *Laelia* and *Sophranitis*. To simplify this if we cross a *Blc.* with an *Slc.* we get a *Potinara*, or a *Blc.* with either a *Soph.* or a *Sc.* still breeds a *Potinara*.

Whilst breeding with these four genera continues the modern trend amongst overseas hybridisers is to produce plants which mature and flower at a much smaller size than we have been used to in the past. One of the methods used to produce these small and compact plants has been to include the species *Broughtonia sanguinea* (abbreviation *Bro.*) into the breeding of new hybrids.

Hybrids containing *Bro. sanguinea* as a parent are becoming common place until recently nearly all the hybrids of *Bro. sanguinea* flowered a similar red-purple colour, however hybrids which flower different colours are now appearing e.g. *Ctna* Maui Maid (*C. Hawaiian Variable x Bro. sanguinea*) is the first white *Cattleytonia* is produced no doubt the alba form of *Bro. sanguinea* was used as a parent. Similarly, Otaara Hawaiian Queen (*Blc. Waikiki Gold x Bro. sanguinea*) flowers yellow and the yellow form namely *Bro. sanguinea 'aurea'* would have been used as a parent. As time proceeds no doubt we are going to see many more *Bro. sanguinea* hybrids producing colours we have not seen before from such hybrids.

By using *Bro. sanguinea* in hybridising this has produced many more intergeneric names which are more difficult to understand than the five we have discussed previously.

It is no longer the rule that part of the name of the genus becomes part of the name of the intergeneric cross. It does on some occasions e.g. *Cattleytonia* which is a *Cattleya x Broughtonia* but it does not on other occasions such as *Bishopara* which is a *Sophranitis x Cattleya x Broughtonia*.

The intergeneric name *Cattleytonia* is perhaps the best known of the group which contain the *Broughtonia* genus. In 1966, a hybrid named *Cattleytonia* (abbreviation *Ctna.*) Keith Roth, (*C. bicolor x Bro. sanguinea*) was registered. (Note both parents are species and therefore written in lower case.)

*Cattleytonia* Keith Roth has been very widely used as a parent and there are hundreds of hybrids of *Ctna* Keith Roth in existence. One of the more popular ones in this area is *Ctna. Jamacia Red*, (*Ctna. Keith Roth x Bro. sanguinea*).

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Remember a *Cattletonia* is a *Cattleya* x *Broughtonia*. Therefore a *Cattleytonia* has *Cattleya* in its breeding a *Cattleya* is one of the four genera we discussed at length previously.

Returning to the genus *Broughtonia* and its abbreviation *Bro.* Although the abbreviation is *Bro.* we cannot use this abbreviation when crossing the genus *Broughtonia* with other genera of the *Cattleya* group as the abbreviation *B.* represents the *Brassavola* genus, as we have discussed.

In some instances the "tonia" from the end part of the word *Broughtonia* is placed on the end part of the generic name of the plant to which the *Broughtonia* has been crossed, e.g. as shown in the intergeneric name *Cattleytonia* above, or as in an intergeneric cross between a *Broughtonia* and *Brassavola* which produces a *Brassotonia* (abbreviation *Bstna.*)

This is however the exception rather than the rule, as once we look at many of the more complicated crosses the going gets very heavy. I will list the more common intergeneric names and their recognised abbreviations together with their generic make up; however at this stage I think we have gone far enough. It appears that the intergeneric name is generally derived from the person who initially made the cross plus the termination — "ara" have been added to the end of that persons name e.g. a *Broughtonia* crossed onto a *Sophrocattleya* is a *Bishopara*, abbreviation a *Bish.* *Broughtonia* x *Sophrolaeliocattleya* is a *Hawkinsara* (abbreviation *Hknsa.*) and a *Broughtonia* x *Brassalaeliocattleya* is a *Otaarra*, (Abbreviation *Otr.*)

This is how the *Hasegawaara* (abbreviation *Hasgw.*) the five genera cross mentioned in the second paragraph of this article comes about.

I hope from this discussion that I have assisted those who had not previously tackled the subject to understand it.

Once the generic names and abbreviations are learned you will soon understand the subject.

Listed are the more common genera and the intergeneric names which are produced as a result of breeding between the genera: Genus (Singular) Genera (Plural) — *Brassavola*, Abbreviation *B.*; *Broughtonia*, Abbreviation *Bro.*; *Cattleya*, Abbreviation *C.*; *Laelia*, Abbreviation *L.*; *Sophronitis* Abbreviation *S.*

Each of the above are separate genera and are the starting point for most intergeneric breeding in the *Cattleya* alliance.

I will commence with *Brassavola* and list the more popular intergeneric names produced as the result of breeding different genera to it.

*Brassavola* x *Cattleya* = *Brassocattleya* (*Bc.*); *Brassavola* x *Cattleya* x *Laelia* = *Brassolaeliocattleya* (*Blc.*); *Brassavola* x *Cattleya* x *Laelia* x *Sophronitis* = *Potinara* (*Pot.*); *Brassavola* x *Cattleya* x *Sophronitis* = *Rolfeara* (*Rolf.*); *Brassavola* x *Cattleya* x *Laelia* x *Sophronitis* x *Broughtonia* = *Hasegawaara* (*Hasgw.*); *Brassavola* x *Cattleya* x *Broughtonia* = *Stellamizutaara* (*Stlma.*); *Brassavola* x *Broughtonia* = *Brassotonia* (*Bstna.*); *Brassavola* x *Broughtonia* x *Cattleya* x *Laelia* = *Otaara* (*Otr.*); *Brassavola* x *Laelia* = *Brassolaelia* (*Bl.*); *Brassavola* x *Laelia* x *Sophronitis* = *Lowara* (*Low.*); *Brassavola* x *Sophronitis* = *Brassophronitis* (*Bnts.*).

I will now deal with intergeneric crossed produced from the genus *Cattleya*. (I will not include them if they have been listed under the genus *Brassavola* as it makes no difference in what order they are included in intergeneric cross).

*Cattleya* x *Broughtonia* = *Cattleytonia* (*Ctna.*); *Cattleya* x *Broughtonia* x *Laelia* = *Laeliocatonia* (*Lctna.*); *Cattleya* x *Broughtonia* x *Laelia* x *Sophronitis* = *Hawkinsara* (*Hknsa.*); *Cattleya* x *Broughtonia* x *Sophronitis* = *Bishopara* (*Bish.*); *Cattleya* x *Laelia* = *Laeliocattleya* (*Lc.*).

The next is *Laelia*. *Laelia* x *Broughtonia* = *Laelonia* (*Lna.*); *Laelia* x *Broughtonia* x *Sophronitis* = *Hartara* (*Hart.*); *Laelia* x *Sophronitis* = *Sophrolaelia* (*Sl.*).

The last genus is *Sophronitis*. *Sophronitis* x *Cattleya* = *Sophrocattleya* (*Sc.*); *Sophronitis* x *Cattleya* x *Laelia* = *Sophrolaeliocattleya* (*Slc.*); *Sophronitis* x *Laelia* = *Sophrolaelia* (*Sl.*).

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# 3RD ASIA PACIFIC ORCHID CONFERENCE

Syd Monkhouse

Adelaide, South Australia 30th August to 4th September 1989

The Asia Pacific Conference comprises an international association between orchid enthusiasts of all countries included in the region, ranging from India and Sri Lanka in the west, to Hawaii and the Philippines in the east, Japan and Korea in the north to Australia and New Zealand in the South.

The third APOC conference will take place in Adelaide, South Australia from August 30 to September 4 1989. The main focal feature will be the International Orchid Show and this really should not be missed.

Of course, a "Conference" means a time to talk and also a time to listen and learn. A special "talks program" has been organised featuring some famous people discussing a wide range of orchid topics. The Fletje Theatre of Adelaide University will be the site for the day long lectures which will include such speakers as:

Dr. Hedge of India — Conservation of Indian Species.

Dr Tanaka of Japan — Propagating Phalaenopsis from Leaf Segments.

Mr Doug Burgess of New Zealand — Recent Orchid Hybrids flowered in NZ.

Dr. Christopher Teo of Penang — Orchid Species of Malaysia.

Dr Noel Grundon of Australia — Fungi, Some Good and Some Bad.

Mrs Helen Richards of Australia — Culture of Australian Terrestrial Orchids.

Mr George Vasquez of USA — Phalaenopsis culture.

Dr David Brown of USA — Aspects of World Orchid Conferences.

Dr Vij of India — Chromosomal Dynamics of Indian Orchids.

Dr Pimchai Apavatjirut of Thailand — Species Orchids of Thailand.

Dr Kadzimin of Selangor — Germ Plasm Preservation.

Finalisations of speakers will see 14 presentations extending over three sessions on Saturday September 2. The

three sessions comprise a morning, an afternoon and an evening period.

Transport from lecture site to the Wayville Showgrounds, site of the APOC 3 Orchid Show, will be available in registrants satchels.

Conference headquarters will be the Southpark Hotel/Motel which was selected because of its location close to the Wayville Showgrounds.

Because our conference coincides with the Royal Adelaide Show, accommodation will be very difficult to obtain unless application is made through our Secretariat. The conference is holding many block bookings, however, book now as we cannot hold these too long and we would be very sorry to have any registrants disappointed.

For full information on all aspects of the conference send your name and address to: The Secretary, APOC3, PO Box 25, Parkholme, South Australia 5043. Telephone (08) 298 6689.





*Odontioda Lincade 'Red Ruby'*

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#### PLAN TO EXHIBIT A.P.O.C. 3

The APOC 3 Orchid Show will be superb. The 1,500 square metre site will have individual exhibits of 9 square metre area (not necessarily square) and smaller bench top exhibits of approximately 2.5 square metres for cut flower or very small displays. There is something for everyone in the show schedule. Prize money is approaching Aus \$10,000 — with the Grand Champion attracting a \$1,000 — cash prize and the Reserve Champion \$750. The entire show schedule is included with our information leaflets, however, Champion classes include Australian Native Orchid, Cattleya and Allied Genera, Standard Cymbidium, Intermediate Cymbidium, Miniature Cymbidium, Dendrobium, Odontoglossum Alliance, Paphiopedilum, Phalaenopsis, Vandaceous Miscellaneous (not elsewhere listed), Seedling of Any Genus plus Champion Display and Champion Display of three Cymbidiums for Colour.

There will also be awards for Best Overseas Exhibit Asia Pacific Group, Best Overseas Exhibit Non Asia Pacific Group, Australian Commercial Grower Small Exhibit, Australian Commercial Grower Large Exhibit, Australian Non





*Cym Lois Kelly 'Pink Parfait'*

Commercial Grower, OCSA Affiliated Society, Tabletop Exhibit.

All exhibits except trade are free, but all individual exhibitors must be registrants except for those included in Australian or overseas society exhibits.

If assistance is required for these please contact your show organiser direct: Show Organiser, Mr Syd Monkhouse, PO Box 1, O'Halloran Hill, South Australia 5158. Telephone (08) 381 2011.

It is now urgent that you make your reservations for exhibition space as there is certain to be restrictions on space eventually. Registration and hotel booking are also urgently required.

#### TOURS

The great fun times at conferences are often the bus tours when, with witty lively bus hosts, much fun can be had — especially if a winery is visited on route.

We definitely will have tours and the news is that the Sunday tour to the Animal Park Urimbirra, then some hunting for native orchids (which incidentally can be photographed, but not collected) and a good Aussie barbecue right in the middle of Hans Heysen country will be a high point of APOC 3.

#### HOSPITALITY

A very comprehensive hospitality program is being arranged. All bookings

will be completely computerised, the maximum attention is being given to make all registrants feel welcome. South Australian's are renowned for their friendliness and our hospitality committee is dedicated to enhancing that reputation in every possible way.

#### SPECIAL EVENTS

The Opening Ceremony Cocktail Party on Thursday, August 31 at 7.00 pm at the show site will feature our patron, the Governor of South Australia Sir Donald Dunstan who will perform the Opening Ceremony. Refreshments will then be

served whilst registrants view the exhibits and the prize winners.

The banquet will be a special function at the Stonyfell Winery and this will be a unique experience with good fun, drinks of all types and entertainment. The lovely rustic winery atmosphere of the old wine cellars being used for this function give this a special appeal. There is a good chance you will be able to bottle your own special port wine.

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# Growing Paphiopedilums in the Bowral Area

John L. Marks

In moving from the Sydney area I had to rethink the conditions that orchids require to flourish properly, and to this requirement I looked at the conditions under which orchids were grown in England and the United States.

My first impression was that it was going to be very expensive in heating costs, and being at 2000ft (700m) the light intensity would be much greater, with this in mind I had a feeling that a glasshouse recessed into the ground would save heating to a large degree.

The size of the glasshouse that I required was 11x5½ m which was a short wall 900mm model made to my requirements by A. D. Spring. This has no vents at the ridges as I felt due to the cooler climate this was not required, which has proved the case. The aspect is east-west with the door at the western end, there are three large 15 m *Pinus radiata* to the west which give shade from around 3pm during the hot summer months. During winter other trees shade the glasshouse until 10-30am.

The first thing to do was to get the hole excavated and this was done by a local contractor with the backhoe to an average depth of 1.2m. As this was done a drain at the lowest corner of the slope was dug down to the bottom of the section. Next came the foundations of 300m concrete and the walkway and the base of the centre water tank. Before the walls were constructed drainage pipes were placed around the both sides of the foundations, a very important point, next the outside walls and the water tank were built of 380x190x100mm besser blocks, the outer walls 1200mm high

with a protruding section 800mm from the base to carry the benches. The water tank also of besser blocks is 700mm high.

Before erecting the glasshouse the walls were covered with builders plastic to help keep out any moisture, the centre water tank floor was lined with approximately 50mm of sand and then was covered over to the top of the walls with builders plastic and then the water was added, approximately 2500 gallons.

The next stage was to assemble the glasshouse frame and this was done with the help of Frank Dobell in two days. The next weekend I installed some of the glazing bars and the following weekend Gordon Hansen helped to finish the glazing bars, install the glass and put up the hail guard. As the glass went in it was also given a coat of thinned down white plastic undercoat which stayed on for five years.

The glasshouse was then lined with UV treated plastic at a height of 2100mm and right down the sides to the floor, this keeps the heat where it is required and not at the top of the glasshouse it also keeps out dust and those annoying drops of water that can ruin a flower.

The electrician arrived and ran 35 amp power to the glasshouse in the form of waterproof power points in several locations. The water was also connected and the next thing that happened was the arrival of all my paphiopedilums, cattleyas and the other various genera that I still had, these were all over the floor and one had to step carefully around. As the benches (ARC mesh) and

the pipe work 1" diameter were brought down from Carlingford started erecting the benches, this took several weeks and a lot of naughty words but the result was worth it.

The circulating fans, evaporative cooler and the humidifier were placed in position. Max/min thermometers were hung up to check the temperature. The orchids were moved into their new home in September but I only came down to visit them each weekend until we moved into the house in mid December.

The hot weather that occurred during this time did not effect the plants as the cooler kept the temperature to a nice 90°F (32°C). The humidity is usually around 50 to 60 per cent, while during the night it rises to between 90 and 95 per cent. This does not seem to harm the plants. A 60 per cent shade cloth is used from October to the end of March.

For heating during the first winter when temperatures dropped down to -8°C I used an electric fan heater but this did not keep a minimum temperature of 11°C; there wasn't much that I could do until natural gas was connected and then I was able to use an open flame burner. Overall my running costs for heating and cooling are less than half those incurred at Carlingford. This I put down to building the glasshouse into the ground.

The water in the centre tank is refilled from the glasshouse roof and is used to water the orchids all year, through a proportioner mixer. This gives the orchids a mixture of approximately 600/1 every watering. During the summer I water usually twice a week and the cooler months 7-10 days.

Some times we get a few inches of snow but it doesn't last very long and the hail guard keeps it off the glass. The temperature can drop down to -10°C in the winter, and in summer can rise to 38°C occasionally but there is usually a drop in temperature in the late afternoon.

Due to the cooler period the cattleya's did not grow too well and I had to get rid of them. They were on an "A" frame over the centre bench and this also cut down the light on half of the benches, so removal of them made a large difference to the light factor.

In summing up I have had great pleasure in growing paphiopedilums in a new environment with little or no pollution and I hope to be able to carry on for many a year and still learn more about orchids in general. ●

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# THE AGONY AND THE ECSTASY!

Spring is the main flowering season for cymbidium orchids, the time when the locating of plants and the various orchid mixes used last year, thrill you with fulfilment of aspirations or on the other hand, leave you with the feeling of 12 months wasted!

Spring is the time for decisions of potting-on, cleaning up, perhaps dividing plants: all encapsulated into an optimum couple of months or else they have to be left until the milder autumn days.

Ah, the agony of repotting season — hour after hour for days on end spent standing at a bench removing back-bulbs, sterilising cutting tools, making sure labels aren't lost. (What good is an awarded plant if the label's been mislaid? You know, or are at least reasonably certain which plant it is, but who's going to pay top money for a division of an unknown masquerading as a winner? And what about your own credibility?)

Married female growers still have to prepare meals. This is one chore that just never goes away, and we can't have sandwiches for at least 50 nights in a row! Why not eat out? GO OUT? When your back feels broken and every muscle shrieks in protest, when your idea of supreme bliss is to sink into a hot tub and stay there?

Your record book tells you there are only a few hundred plants in your collection, but spring is when you're sure someone's added extra plants, unbeknown to you. The Leading Hand makes up yet another batch of mix. "More, you need more? Don't tell me you've used it all!"

Interspersed is the ecstasy of spring shows: when just about everyone in orchid societies bring out their darlings to face the judges', and the public's, critical gaze. When, although you know you haven't room for even another single plant you still prowl about around the exhibits holding notebook and pen, jotting down the names of those which have captured your imagination — those which you simply *must obtain!*

Then with relief—and a certain kind of disbelief—repotting's finished, over for another year. This is when those vows you made when you could have cried with that aching back, are pushed away

into the dim recesses of your mind as you view late-season bloomers. (Really, just a few more like those would extend the flowering season even further.)

Colour prints are placed in the brag album and named. Flowering records are studied, and with smug satisfaction you realise this has been your best season EVER!

What of next year? Ah, that's an unknown quantity. One thing is certain though; nothing can compare with the delights and deep despair of this exquisite addiction ●

*Jo-ann C. Burke  
Mount Waverley, Victoria.*

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#### **SCOTT'S 'SUNRISE' 'EMBERS' x (TERAMA 'YOWIE BAY' x RATHEL 'RED' + C)**

SCOTT'S 'SUNRISE' 'EMBERS' is a classy rich red-orange miniature, with blooms carried on a very tall erect spike. TERAMA x RATHEL is an exquisite red standard with low foliage, good texture and great spike habit.

#### **SLEEPING 'BEAUTY' x (PERI 'RODGERS' x TETHY'S 'BLACK MAGIC')**

SLEEPING 'BEAUTY' is a very floriferous pure lemon standard with extremely tall spikes. The PERI seedling is another excellent standard, it has beautiful orange, well displayed blooms with a strongly lined red lip.

#### **SYLVIA ERA 'FARGO' x (TERAMA 'YOWIE BAY' x RATHEL 'RED')**

A very attractive, productive pink standard with tall floriferous spikes, SYLVIA ERA 'FARGO' has been united here with another noteworthy standard. The TERAMA is a red of great texture, low foliage and good spike habit.

#### **(TERAMA 'YOWIE BAY' x RATHEL 'RED' + C) x CRONULLA 'BEACH'**

Both of these standards have excellent spike habit and great substance. The TERAMA seedling is an exquisite red with low foliage. The CRONULLA is a multispiking, full flowering pastel cream with red spotted lips.

#### **pumilum x TETHY'S 'BLACK MAGIC'**

The species pumilum is known for its delicate shape and abundance of flowers. This is the red variant of the species. It has been crossed here with another red. TETHY'S is an excellent red standard with long arching spikes.

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## LETTERS TO THE EDITOR

Dear Sir,

I write this letter to you to register my objection to the change in the rules where all Miniature and Intermediate Cymbidium are to have 13 blooms per raceme.

I also object to the manner in which this ruling was introduced, without seeking any input to this decision from myself or the orchid club to which I belong.

This decision will be felt hardest by those fanciers who have a small collection and those who are not in a position of being able to afford to purchase a large number of newer varieties which do have the required 13 blooms.

Both myself and a lot of others that I know have only recently spent large sums of money to purchase orchids that conformed to the standard laid down at the time only to find that these plants are now worthless as competition plants.

In the future when rulings of this nature are to be introduced I believe it would be a lot fairer and more acceptable if a period of five years was to elapse before it became law to enable new plants to be

purchased and the others to be disposed of.

Finally I earnestly urge you to reconsider your decision to alter the standard to 13 blooms because it adversely effects hundreds of orchid lovers and thousands of their plants.

Yours Sincerely,  
 Kevin Barry.

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# Australian --- Orchid Review

APRIL 1989



VOLUME 54-NO. 2



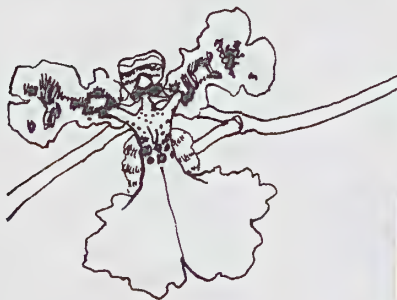


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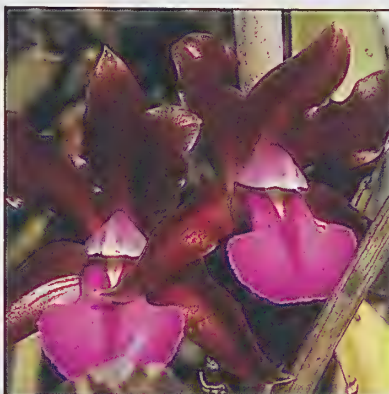


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*C. bicolor v. braziliensis*

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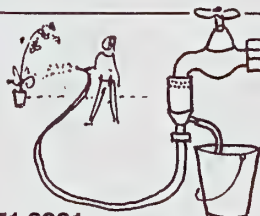
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## Cover:

Ann Dor x Drumroy  
x  
O.harryanum

(See article Back to the Species in Odontoglossums)

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## ERRATA

### THE RETURN OF THE COUNT.

February issue 1989. Page 5, paragraph 4, line 4  
corrections: — only a few species such as D. severa,  
D. berthae and D. cochliopsis send their inflorescence  
up vertically or arching, it is normal for most species to  
have their inflorescence pendant.

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# BACK TO THE SPECIES IN Odontoglossums

A 3 part series on:

BACK TO THE SPECIES IN *Odontoglossums*

**PART 1** *Odontoglossum harryanum*

**PART 2** *Odontoglossum cirrhosum*

**PART 3** *Odontoglossum bictoniense*

## *Odontoglossum harryanum*

(*Odm. harryanum* — a species from Columbia) SLIDE 1

From time to time in the history of hybridizing innovative breeders often take a step backwards in order to further advance their line of endeavour. A classic example of this is perhaps in modern *Paphiopedilum* breeding where species have been used in combination with modern hybrids to produce stunning results.

*Odontoglossum* breeding in Australia has never been much in evidence until Gerald McGraith put his hand to the task over the last decade. While the majority of his crosses were made with typical Charlesworth type *Odontoglossum* and *Odontioda* hybrids, he did every now and again use species such as *Odontoglossum rossi* & *O. carniferum*. The results were exciting, offering different colour patterns, growth habits and above all character.

At Mt. Beenak we also looked to several other species parents and several years ago imported flasks from Keith Andrew in England, one of the great innovative hybridizers in the world. The species involved in the hybrids we purchased were *O. harryanum* and *O. cirrhosum*. This first article looks at our discoveries in blooming *O. harryanum* seedlings and what the future holds for breeding *O. harryanum* hybrids.

Our first thrill upon deflasking several crosses all with *O. harryanum* as one parent was the very evident vigour these seedlings had. Right from first plant-out the seedlings grew well and had a natural strength not seen in most complex hybrids. They also matured fast and the first seedling flowered under 18 months ex flask. However it was not for three years and beyond when the plants matured, that we began to see the flowers in their true glory.



1. *Odm. harryanum*

Before we look at some of the progeny flowered from the initial crosses I must make clear that *O. harryanum* was used extensively in the past and many fine hybrids were bloomed and awarded. I was given an R.H.S. award painting that hangs in my lounge room of *O. Magnificat* (SLIDE 2). This received an AM/RHS in 1922. The parentage shows *O. harryanum* as the grandparent on both sides. While it does not have the distinctive look that primary *O. harryanum* hybrids have, one can see much of the shape and largish square lip that is so prominent in the lineage.

Our first seedling to flower was *Odontonia* Royen x *O. harryanum*, we subsequently named this *Oda. Corrida*. The flowers were very bold and striking with dramatic markings of red, brown and white. (SLIDE 3) The lip, one of the great *O. harryanum* features, was almost miltoniopsis like in its size but lacking the violet colour that often carries through. Subsequent bloomings saw these bloom with 15 or more flowers and straight strong spikes. Further seedlings of this cross showed similar results but a few had unusual copper tonings with some violet

appearing around the labellum (SLIDE 4).

Next to bloom was *O. harryanum* x *Oda. Argia* "Argus". *Oda. Argia* is an old *Odontioda* bred by Charlesworth in the early thirties, a fine red that parented the famous *Oda. Colwell* and others. This cross is registered as *Oda. Tasca*. The majority have been intensely dark reds. Here for the first time we saw the violet lip coming through, though much stronger in colour than in *O. harryanum* itself. The flowers all have somewhat ruffled look some say detracts from the quality but to my mind says "vive la difference" (SLIDE 5).

One of our first seedlings to flower as a very young plant was from the crossing of the famous *Odm. Stonehurst* "Yellow" AM/RHS to *Odm. harryanum*. It carried but a single flower it was striking, a good one to grow on.

The flower was picked and the plant grew rapidly to bloom some time months later with five flowers. Evidently these would be good growers, others of the cross were flowering too and showed similar class.

Our best variety of this cross now named *O. Yellow Harry* gained Best



*Odontoglossum* at the 10th Australian Orchid Conference in Adelaide. Quite an achievement for a primary hybrid! (SLIDE 6)

The photograph will tell the story, showing the bold yellow & brown colouration but will not convey the tremendous substance these flowers have. Many odontoglossums are lacking in this area. The lip so often small and pinched is here bold flat and carrying the violet pigment. Shape is poor by modern Odont. standards but flower size is large at 100mm. Thankfully this cross proved to be quite fertile and we have made a number of selective crosses to utilize the obvious useful traits, however finding mates is not easy even from our substantial collection. Fortunately growers overseas have been more than free with pollen for us to use.

Our final hybrid I wish to review came not from Keith Andrew but from Andrew Easton. Andy hasn't made enough Odont. crosses for my liking for those we have seen are different and colourful. The cross in question was (*Oda. Ann Dore* x *Oda. Drumroy*) x *O. harryanum* (SLIDE 7).

Again growability was tremendous, hardly a seedling succumbed. Flowering was fast, plants almost always flowering before two years old, not good for the plants but hard to resist a quick peak to see what's in store for the future! Colour and pattern was very varied with yellow or white base colour barred, blotched, or spotted in varying hues of red, orange or brown. Shape varied from open to quite filled in but still having that distinct *O. harryanum* look that is so appealing.

With all the *O. harryanum* hybrids we have grown, plant vigour is excellent; hot day temperatures while not enjoyed are at least tolerated. Root systems seem less damaged by injudicious watering and plant growth seems to keep going all year round. Flower production in these crosses is very good but often erratic in season.



5. *Oda. Tasca "Dark Carmen"*



2. *Odm. Magnificent*



6. *Odm. Yellow Harry "Conference"*

The same variety will often flower in Spring one year then late Autumn another or even mid Summer, though this is to be discouraged as flower quality is poor during hot weather.

While our experience at Mt. Beenak covers only a handful of crosses we are certain that *O. harryanum* will continue as a major parent in our breeding program. Many primary crosses have never been made, let alone seen in bloom.

*O. Crispo* — *Harryanum* remade by Andy Easton recently bloomed for us and would excite the most jaded palate. Andy also remade *O. Elaine* (*O. harryanum* x *O. cirrhosum*) spectacular would be the only way to describe these and in our next article we will look at *O. cirrhosum* and some of its progeny. ●

Clive Halls  
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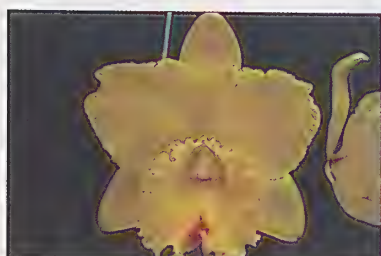




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# GROWING ORCHIDS IN THE TOP END

WRITTEN/COMPILED BY LYN BATES

ORCHID SOCIETY OF THE NORTHERN TERRITORY

"You can't grow orchids in Darwin!" was the emphatic statement made 20 years ago to all newcomers to the Top End.

Indeed, with "Wet" season temperatures at a consistent 33 degrees C, high humidity and monsoonal rains from December to March, followed by a "Dry" of almost 8 months of cloudless, blue skies and temperatures seldom below 20 degrees C even at night, the Top End of the Northern Territory hardly provided the ideal conditions for the orchids grown by the average Australian.

Some of the newcomers, however, were determined pioneers and were also facing in a different direction. Instead of attempting to relocate the familiar Cymbidiums and Cattleyas which thrived in Australia's Southern climes, they looked to S.E. Asia and our near northern neighbours for tropical species and their hybrids. From the jungles of Indonesia, Malaysia, Thailand and the Philippines came magnificent Vandas and Phalaenopsis: The tropical lowlands of Papua New Guinea gave up their Ceratobium Dendrobiums: Similarly harsh climates in South America produced Oncidiums, Epidendrums and Encyclias: Brassovolas and Cattleyas came in from Brazil.

This small band of "pioneers" grouped themselves together on 29 April 1974 to form the Darwin Orchid Society, with the specific purpose of pooling their experiences with tropical orchids and changing the established thinking on orchids growing in this climate. Dennis Hearne, noted for his extensive work in plant tissue culture, became the Foundation President of the Society. They held their first orchid display in July of that year at the Darwin Show. The then North Australian Show Society Inc. allocated them a corner of the old tin shed and the ladies (including Rosemary Bromwich, Janet Raby and Clem Kelly) under supervision by Ralph Handcock (then a young lad of a mere 84

years) set up a small but varied display which surprised and intrigued the showgoers.

I can, myself, recall remarking while studying a high strapleaf Vanda, "That's not an orchid!" The general public and I had a lot to learn!

The display had shown that orchids of many genera were being successfully grown in Darwin. Education and familiarisation was the key to acceptance of these lovely plants by the average gardener. The enthusiasts had taken a positive step in the right direction.

By dawn on the morning of 24 December 1974 however, Cyclone Tracy had ravaged Darwin. The survivors crawled from their places of refuge to view the devastation with disbelief. From amongst the debris of homes, household possessions and ruined Christmas presents, orchid growers salvaged what little they could find of their orchid collections. Many people were evacuated to the South for varying periods of time. Those who remained attempted to save what plants they could for their owners' return.

On 3 February 1975 a Meeting was called which was attended by 16 people. With Mrs Nancy O'Hara in the Chair, the Orchid Society was set firmly on the road to rehabilitating the orchid gardens of Darwin. Though the Society's battered cash tin revealed only one \$5 note and a \$1 note — both totally mouldy — offers of assistance came in from many people and Orchid Societies. Gifts ranged from money with which to purchase shade cloth and replace books, to flasks of orchids which were distributed amongst Society members.

Enthusiasm increased and Judging Classes were commenced in June 1975, under the auspices of the Queensland Orchid Society. The Chairman of the Judging Committee was Ralph Handcock who had long and valuable experience with orchids, having owned an Orchid Nursery in Sylvania, N.S.W. Ralph, a Life Member of the Sutherland Shire Orchid Society and an accredited Orchid Judge of many years standing, was also the author of two books which for many years were the only works written by an Australian for orchid growers in Australia. These books are still in print, and Ralph Handcock, now in his 94th year, is still a valued and active member of the Orchid Society of the Northern Territory (as the Darwin Orchid Society is now named), having been made Life Member in 1978.

The Queensland Orchid Society sent us a regular supply of colour slides and on several occasions funded visits to Darwin by members of their own Judging Panel to help in Darwin's lonely quest to produce accredited Judges — lonely not only because of the vast distances between this Society and the rest of Australia, but also because of the great differences in the orchid genera which are grown here.

In June of 1976 Darwin was fortunate indeed to receive the donation by John Womersley, former Resident Botanist in Lae, Papua New Guinea, of his private collection of approximately 700 orchid plants. This valuable collection of Vandas, Renantheras, Arachnis and Ascoglossum was eventually established at the Darwin Botanic Gardens in a new display house, and on long lines of the local "sand palm" trunks set in large outdoor beds.

John Womersley was impressed by the progress made in the rehabilitation of old, damaged plants and the development of local orchid collections since Cyclone Tracy. Darwin residents were taking unprecedented interest in their gardens. Gone were the unrelieved, drying expanses of lawn. These were being enhanced with plantings of palms, shrubs and trees of all kinds. Darwin was turning into a green, tropical oasis, complete with tropical orchids! Encouraged by Society displays and plant sales tables which sold only plants which would thrive and flower here, people were discovering that small collections of tropical orchids were very easy to maintain and flower in Darwin. Establishing the correct environment is the key, and interest has grown so much that Darwin now boasts three Orchid Societies, the Orchid Society of the Northern Territory, the Nightcliff Orchid Society and the newly formed country group, the Litchfield Orchid Club.

It was in one of these "oases" that the first idea of forming an Orchid Society

con. on p. 33



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Dear Sir,

Last spring (1988) I resumed the liquid feeding program given in Table 3 of my article on Salting (AOR Summer 1988).

After about 6 treatments it was clear that the new emerging leaves were not greening up properly. The main iron source was changed from iron sulphate to solely iron EDTA chelate. The liquid fertilizer thus became more closely aligned with Bill Johnson's formula. Satisfactory greening up occurred after this change in formulation.

I must also report that something striking happened during this period. In a fairly large number of both young and older plants, their new shoots were growing at about a 30 degree angle to the horizontal at the start of liquid feeding. By now they have straightened themselves up towards the vertical in many plants. Some clones of course have not done so.

No doubt some growing shoots have risen towards the light; some of the leads pointing towards the light rose only to about 30 degrees from the vertical, while those pointing in the less illuminated direction, are now close to vertical.

Is this movement to the vertical common, or is it the effect of good feeding as Bill Johnson has suggested? Answers to questions like this are hard to find in the more readily available orchid books. Does anyone have other opinions as to why this happens?

*Yours faithfully,*

*Peter North-Coombes,  
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# HYBRIDIZING THE ELUSIVE YELLOW-GREEN PHALAENOPSIS

Bob Gordon

(Because (1) this is too broad a field to review all the way back to the beginning of time and (2) I'm not into history, I'd like to look at just the past few years of activity in it; the most dramatic changes in yellow-green *Phalaenopsis* hybridizing have come about in that time.)

A stately white *Phalaenopsis* spray is an elegant thing to behold; but tinged with green it becomes a hypnotic illusion, riveting the attention of the beholder. While many have tried to create a green phalaenopsis, the greens remain much a chance occurrence, defying any attempt to produce them by design. Many hybridizers have had to settle for a green-tinged yellow flower instead, but even this is a deceptive goal.

A GOOD, BIG GREEN OR YELLOW-GREEN PHALAENOPSIS IS ONE OF THE MORE DIFFICULT GOALS IN ORCHID HYBRIDIZING. SADLY, FEWER HYBRIDIZERS ARE TRYING NOW THAN BEFORE. Oh, you'll find a few hobbyists still trying, but not many and almost no commercial growers are doing any at all. Zuma Canyon does a few. John Miller of Anaheim, California, William Shaban of Chicago and Dr Steve Pridgen of Memphis are among the few serious green phalaenopsis breeders I know of, but they are exceptions. I'm not surprised. It's hard to make a living on an effort as elusive as this one.

Yellow-green phalaenopsis crosses are considered to be novelty breeding and are not, at this time, perceived by the buying public to be *real* (italics) orchids. When most people buy the few orchids they do in a lifetime, they want classical, conventional and conservative flowers like whites, pinks and stripes . . . something that says the buyer is traditional and well-bred. So, understandably, little commercial effort is put into yellow-green novelty breeding and almost nothing is being produced that is satisfying to the serious phalaenopsis admirer. The reality is if you want to grow yellow or yellow-green phalaenopsis, plan on making your own.

I sought the advice of Dr Joe Arditto of the University of California at Irvine a few years ago on the subject of green phalaenopsis hybridizing and he suggested putting the greenest thing I had onto the next-greenest thing I had. Not a very

scientific approach, but one that has worked well for mankind for thousands of years. It's slow, but it works. The principle: If you want progeny with warts, use warty parents.

While we know that two pigments, the carotenoids and flavenoids, make yellows, THE CAUSE OF GREEN COLORING IN PHALAENOPSIS IS NOT CLEARLY UNDERSTOOD, so don't feel bad if you don't understand it either. It may be caused by an absence of pigmentation and the consequent dominance of the chlorophyll colouring. Maybe.

## ABOUT HYBRIDIZING:

My comments here are an update on yellow-green *Phalaenopsis* breeding and limited to first generation crosses . . . and to visible characteristics. There may be unseen genetic potential in any cross which could be brought out by back-crossing to one of the two original parents . . . or by selfing. This is an important point . . . and we'll get to it again in a little bit.

Green or yellow colouring in phalaenopsis in the past has usually been produced by the use of a white or light yellow and a *P. amboinensis* or *P. lueddemanniana*. *P. fasciata* has also been used, but to a lesser degree. This combination produced a light yellow or light green shading, but few plants, if any, with any appreciable intensity. This is still the easiest way to make light yellow or light green. Barring or markings are usually suppressed to some degree when it is put on a big white or a light yellow.

Yellow or green colouring in a *Phalaenopsis* flower is lost from sight when it is crossed onto a colour darker than itself. The genetic tendency may still be there, but it will be hard to see. If you are using a parent of another colour for reasons of shape, spotting, or floriferousness, use one that is light-coloured or pale. Less chance of a strong pigment overpowering the fragile yellow-green. You won't have any trouble finding these pale beauties . . . no one else seems to want them.

Sometimes an apparently-green clone will have suppressed or blocked pigmentation. Dr Rob Griesbach refers to the phenomena as 'blocked enzymes' and the

result is no colour except the background chlorophyll . . . green. The latency of colour and markings has not gone away unless you have a true alba, one that selfs green or white.

Herb Hager's rule of thumb for hybridizing, suggested at the 11th World Orchid Conference in Miami, is operative in developing yellow-green phalaenopsis just as in other colours and types . . . and is worth repeating here.

It calls for (1) either back-crossing or self-pollination to reveal the whole spectrum of qualities, including colour, that are available from any given clone and; (2) sibling-crossing to concentrate or focus on a trait. This rule would be applied to yellow-green hybridizing by selfing a plant that has desirable qualities, then sib-crossing two of the progeny that best embody the colour and shape/size being sought.

Dr Henry Wallbrun's suggestion on back-breeding calls for re-introducing one of the two parents into a line of hybrids downstream of its original use . . . to search for a variety expected or hoped for. If the plant used is a species, the added benefit of species vigor can be had. The object of reintroduction . . . or repeated re-introduction . . . is to search for a variety that embodies the shape, colour or size that one parent had and to find it in combination with shape, size and colouring in the other parent. No new qualities are likely to be found in this kind of a cross and you're likely to throw away a lot of plants too, but you also may find a few superior varieties. That is what hybridizing is all about and why it is so exciting.

A useful approach to phalaenopsis hybridizing, parallel to Joe Arditto's advice, is that of colour-crosses and size-shape crosses. Most unconventional hybridizing (the kind that leads to breakthroughs) is done with plants that are unlike in colour, shape, size and flowering habit. In working toward the goal of a large, well-shaped, bright green phalaenopsis, I think it is helpful to cross a good green with first a colour-cross and then a size-shape cross . . . on alternate generations to build toward the goal, in my case, of a 5-inch emerald-green. But don't expect quick results. I certainly don't.



The idea is to make the change gradually and thereby improve chances that a significant number of the progeny bear the qualities you are looking for. You may get lucky with a radical cross and find the one mutant that is what you are looking for to breed with. But, your chances of finding the Dream Green are much greater if you build on a stable base. Besides, you'll have more to select from. Note that most commercial growers stick to the more conservative crosses. That way, they can sell their mistakes. (Ever notice that the longer good hybridizers have been at the game the more conservative they become? Herb Hager, after over 60 years in orchids, is *still* making small changes in his marvellous *P. equestris* crosses.)

Conventional breeding wisdom calls for periodically re-introducing species or primary crosses to add vigor and substance to the hybrids. Makes sense.

**WORK TOWARD A GOAL THAT YOU HAVE CLEARLY IN MIND.** Don't digress. To make what you want, design a gene package . . . (designer genes?) starting with the closest thing you have to what you're looking for. Make a hybrid with it and keep the progeny that best embody the features of what you are trying to make. Work with the plants you have, adding new material from time to time if any appears promising. Talk to everybody you can find who knows anything about your subject. In a few short years, you'll find you will have the best selection of plants available anywhere to do the job you want\* to do. But, if you digress you have to start building all over again.

But, like in business, be alert for something that looks good even if it's in another direction. If, for example, you're trying to make a green . . . and a blue *phalaenopsis* falls out, for heaven's sake, don't trash it because it isn't green! Be dedicated, but don't be ridiculous. Some of man's greatest inventions have turned up when the inventor was trying to find something else.

## SOME GREEN-BREEDING SPECIES

I hear people who say there are no ugly flowers . . . just as there are no ugly children . . . but there *are* limits. You're stuck with your kids, but you can unload unpromising crosses. A standard *P. micholitzii* on a white produces a light green tone, but also imparts poor shape in most of its progeny. If you're into ugly, go no further than right here. *P. fuscata* also imparts the poison pill of poor shape to most of its progeny, but not all. True, it gives some green colour, but you'll need two or three generations to get rid of the lousy shape . . . and by that time the green is gone, too.

*P. cornu-cervi* produces the same sorry result as *P. micholitzii* and Hugo Freed describes it as the perfect breeder: anything

you do to it will be an improvement. Ditto for *P. heiroglyphica*. *P. mannii* is not quite as bad, but a primary cross of *P. mannii* and *P. amboinensis* (*P. Mambo*) has produced some lovely greens with so-so shape.

Hybrids made with these species are best left to the pros. They can produce good results, but the majority are unsatisfactory and can lead the novice breeder to give up in despair.

*P. stuartiana* on a white will often produce green colouring on the inside of the lower sepals in the same location as the red-lavendar on a borneo *P. violacea*.

*P. sumatrana* will sometimes produce green on a white, but this result is unpredictable. (Put on a *P. violacea*, *P. sumatrana* produces what appears to be a red-orange *P. violacea*. *P. sumatrana* is often colour dominant; its other qualities appear to be recessive.)

*P. fimbriata* on a white produces an exquisite silvery, icy-green, but the colour is fragile and does not come through well on subsequent generations. This colour is certainly worth looking into. *P. cochlearis* has the same shortcoming.

The green colouring in *P. violacea* seems to be recessive at least in the first generation. That brings up a point Henry Wallbrun made: a hybrid crossed back onto one of its parents can produce some startling colours. He crossed *P. fuscata* with *P. violacea* and made a rhubarb-coloured *P. Bee Ridge*. When he put *P. Bee Ridge* back onto *P. violacea*, it made the pure green *P. Bornean Emerald*.

*P. leuddemanniana* ochracea 'Green-finch' produces some green, but it is not strong. I think this could be a productive line.

*P. inscriptiosinensis* has not been used to any great degree, but is certainly worth looking into when there are a few more around to work with.

There are a number of primary hybrids that also produce green when put on a big white; *P. Spica* and *P. Golden Pride* come to mind quickly. Ken Griffith of Lenette Greenhouses in Kannapolis, NC advises that the *P. Corona* (*cornu-cervi* x *amboinensis*) he uses . . . transmits yellow colour better than any other yellow parent he has used. Further, apparently the *P. Corona* is dominant only in colour and is recessive in shape. This means the other parent's shape will be evident in the seedlings. Sounds like it might be worth a try.

## ... AND P. AMBOINENSIS, OF COURSE.

*P. Liz Greenlees* (*amboinensis* x *Artienne*) on a big white made the light green Janet Gordon, a result typical of *P. amboinensis* on a big white. The green flashes on the tips of the sepals are characteristic of crosses made with *P. Liz Greenlees* on a big white. Most of the *P.*

Janet Gordon cross came this way. I've back-crossed the best one to find a prime specimen with this feature and possibly enhance it by sib-crossing it with the next best.

There were some good green *P. Sarah Frances Pridgens* (*P. Barbara Moler* x *P. amboinensis*).

*P. Golden Sands* (*P. lueddemanniana* [?] on a big white) is a good source of yellow and often yellow-green. *P. Golden Sands 'Canary'* on *P. Patricia Neal*, a big white, made *P. Meadowlark 'Golden Eagle'*. Then, Rob Griesbach made the beautiful, yellow *P. Plover* by crossing the *P. Meadow Lark* with *P. amboinensis*.

*P. Meadow Lark* x *P. Golden Spice*, by *P. Lady Doreen*, a back cross, made *P. Spicy Gold* and some excellent four and one-half inch yellow greens.

*P. Golden Amboin*, a *P. Golden Sands* hybrid, by *P. stuartiana* made *P. Flor Del Valle*, several of which have been awarded.

The African species *Eurychone rothchildiana* is compatible with *phalaenopsis*...at least in theory. There is one cross registered in Sanders, but I have had only very limited success with the cross of *Eurychone* (pronounced yew-'rick-o-nee) and *Phalaenopsis* and have never progressed beyond the protocorm stage in the flask. I'm going to continue trying, though, because of the potential of the emerald-green throat on the 1-inch diameter flowers. I get giddy thinking of what that would look like on a 5-inch white *Phalaenopsis*.

## P. venosa BREEDING

THE *P. venosa* OR *P. psilantha* IS THE MOST EXCITING THING TO HAPPEN IN YELLOW-GREEN BREEDING SINCE *P. amboinensis*. It may end up being a better yellow breeder than *P. amboinensis*. Its big contribution is a yellow, yellow-green, or yellow-orange background on the flower. Enterprising hybridizers everywhere are remaking all the good *P. amboinensis* crosses using *P. venosa* in its place. We should be up to our cross books in them shortly, because most of these have been made since 1984 when John Miller registered the first *P. venosa* cross.

A *P. venosa* of dark brown or red-brown, colouring seem to produce a good percentage of yellows and yellow-greens. Yellow or green *P. venosa* (var. *ochracea*) produce a lower percentage and are quite likely to produce no apparent green colouring at all. John Miller crossed a brown *P. venosa* with the big white *P. Mem. Anton Smith* to make the *P. Bob Gordon*. Many of the cross were sterile to some degree, but a few breed well.

*P. venosa* has had a confusing past. Schlechter originally called it *P. psilantha* and described it a discrete species. It was later categorized as a synonym for *P.*



*modesta*. Herman Sweet called it a synonym for *P. amboinensis* and Soon & Fowlie later re-described it as a new species and called it *P. venosa*. That's where it stands...for now, at least.

It is understandable that some thought *P. venosa* to be a *P. amboinensis*. It looks a lot like one except for the colour and that's not far off. When Fred Thornton, Jr did the remake of the original *P. Deventeriana* (*P. amabilis* x *P. amboinensis*) that produced 'Treva' and 'Goldie', he may have used a *P. venosa* thinking it was a *P. amboinensis*.

THIS WOULD EXPLAIN WHY NO ONE HAS BEEN ABLE TO DUPLICATE the two famous yellow-green clones that Rex Smith named 'Treva' (AM/AOS) and 'Goldie' (HCC/AOS). (Rex got them from Fred.) A brown *P. venosa* on a big white frequently produces yellows that are strikingly similar to the two awarded clones of *P. Deventeriana*.

Most of the results of breeding with green *P. venosa* that I've seen were less satisfactory than those of the brown *P. venosa* in the production of yellows and greens. I've heard some have been good, though.

If *P. Deventeriana* 'Treva' was made with a *P. venosa* instead of a *P. amboinensis* as presumed, a *P. venosa* crossed back onto *P. Deventeriana* would be an example of back-cross breeding. This appears to be the case with the cross of *P. Nancy Gordon* (*P. venosa* x *P. Deventeriana*) which makes most offspring with intense yellow-green colouring, a result that might be expected from breeding back onto *P. venosa*. Surprisingly, there hasn't been the wide variation in the different clones that might be expected. None have come clear yellow-green, yet, as I had hoped.

*P. Deventeriana* has been a good source of yellow and yellow-green. *P. Deventeriana* by *P. amboinensis* made *P. Suziana Wijanto*...and when *P. Deventeriana* was crossed with a pathetic *P. Mambo*, made *P. Sierra Gold*. Roger Brown's nearly-concolour yellow clone 'Suzanne' was awarded an FCC by the AOS.

Markings from the *P. venosa* frequently disappear, sometimes completely, from the progeny of a cross with a white, pink or yellow, just as with *P. amboinensis* crosses. This is not the case, however, when the *P. venosa* is put on any other marked or barred flower. Then, the markings come through loud and clear with few exceptions, but the markings fade. *P. venosa* eats them. The results of the fading process are spectacular in that the yellow background seems to boom out of the sometimes drab flowers in a blaze of glory before the flower collapses.

As brown-red *P. venosa* and its hybrids age, the red overlay on the yellow back-

ground fades, sometimes completely, leaving a strong yellow colouring. At first glance it appears as though the yellow is intensifying, but the fading of the red is the cause of the change. This overlay fading quality is passed on to a good percentage of *P. venosa* progeny... at least to the first generation.

Some of the cross of *P. Bamboo Baby* by *P. venosa*, *P. Frances Melendez*, came out nice. A few have been awarded. I haven't seen a clear yellow or yellow-green one to date. (Do I need say I'm looking for a concolour yellow-green for breeding?)

And, of course, *P. venosa* x *P. Natalie Wood* made the striking *P. Bonnie Vasquez*, two clones which have been awarded FCC's.

'Take' rates of yellow-green crosses are about what you'd expect from novelty crosses. I've had about 50% make pods and about 20% of those produce good seed... or about 10% of the total attempts. The two *P. venosa* clones I've used for breeding, 'Del Rosa' and 'Shamrock', both produce good germination rates. I have two others, mature plants, that appear to date to be sterile or nearly so.

This listing of yellows is in no way complete. They're just a few I've dealt with. Many good, well-known yellows, like *P. Golden Emperor*, are not included here because I haven't had any luck breeding with them and it doesn't make a lot of sense to talk about hybridizing and show pictures of mules.

As with the *P. amboinensis*, we've already seen that some *P. venosa* breed yellow backgrounds and some white. Like *P. amboinensis*, too, it will be necessary to use *P. venosa* to find what each variety will do. It's going to be a slow process. You certainly can't tell from appearances, but I suggest starting with the closest thing to an all-brown *P. venosa* you can find. There are some available commercially. A good bit of selfing and sib-crossing is going on, so some superior clones should show up soon.

For the conservative or timid hybridizers, try starting with a brown *P. venosa* and cross it with a white or almost anything that has done well with an *P. amboinensis* in the past. Sanders and the Awards Quarterly are good sources of information on where to start. For the less conservative hybridizers, try using the same brown *P. venosa* on any *Phalaenopsis* or *Doritaenopsis* that has green colour already. Consider back-crossing on a good green or potentially good green *P. venosa* or *P. amboinensis* hybrids.

If you can't get a good *P. venosa*, use a known yellow-breeding *P. amboinensis*. They are available. Talk to any *Phalaenopsis* specialist for a source.

For heaven's sake, use good breeding stock. Only the rankest amateur uses mediocre plants for breeding. Commercial

growers use only the best studs because they know that only a small part of the cost of a new hybrid is the purchase price of the parent plants. The real cost comes in caring for a bunch of seedlings for 2 or 3 years until they begin to bloom. (And if they sell them before they bloom and they turn out to be junk, the commercials get to be hobbyists again.) It cost just as much to raise a trash plant as it does an FCC... and they take up an equal amount of precious bench space. So use only the best you can find and buy. If you haven't got good plants to work with, wait until you have.

If you want to make a cross to see the miracle of plant reproduction being enacted, fine; but plan on keeping the seedlings to yourself or trashing them. Don't turn them loose on the rest of us. We're up to our belly-buttons in junk plants already.

But do, do consider working with what is potentially the most lovely thing in *Phalaenopsis* after the classical whites... the serene greens. ●

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## NATIVE EPIPHYTES IN SOUTHERN VICTORIA

If nature had intended that Australian epiphytic/lithophytic orchids were to grow in Southern Victoria, either the species would have the genetic make up to suit the environment or the environment would have been changed to suit the species. Since neither event has occurred naturally, man must — to grow these plants with any degree of success — at least provide the basic requirements as we would for any exotic orchid species, or, for that matter, any other plant. The fallacy "that since it is native it should grow here" could not be further from the truth without considerable effort to make it happen.

The majority of our epiphytic/lithophytic orchids inhabit the coastal strip between the mountains and the sea from Eastern Victoria, up the eastern coast to Cape York Peninsula. Even in this relatively small area in a country as vast as Australia, there exists a range of climatic conditions from snow and frost areas to the constant temperatures of the true tropics, from open grasslands through various degrees of forestation to the jungle like tropical rain forests of the north. The effect of these changing conditions is reflected in the range of varieties within a given species. The basic conditions required by a species or variety should be considered before we attempt to grow these plants in our vastly different environment.

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continued p.22





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## Judging of the Genus *Stanhopea* Neville Shaefer

This paper presents a summary of a report submitted as a partial requirement of the Orchid Society of New South Wales Ltd. judging course. It involves an examination of the criteria used by judges of the Orchid Society of New South Wales Ltd. in society shows and monthly meetings. The original report contains 65 photographs and reproduction of which in an article such as this is clearly impossible. Wherever possible the examples have been remarked to use illustrations in publications which are available in most orchid society libraries. This has meant that some compromises have been made an unfortunate but unavoidable situation.

The genus *Stanhopea* contains about 46 species, the actual number is continually changing as new species are found (*S. tadeasi* 1984.) while others are being reclassified as (*S. rodigasiana* to *Embreea rodigasiana*) (*S. ecornuta* possibly to *Stanhopeastum ecornuta*). Despite these difficulties a system of judging has been developed to evaluate the horticultural or aesthetic merit of each separate species or hybrid. It is important to stress that these are purely aesthetic or horticultural considerations and have nothing to do with the ability of the orchid to survive in its natural environment. We are dealing with value judgements where there is no right or wrong but hopefully a consensus among experienced orchid people on what is and what is not desirable.

## Judging Systems

Judging at shows and monthly meetings of orchid societies affiliated with the O.S.N.S.W. Ltd. follows basically the Standards for Judging Handbook set out by the Australian Orchid Council (A.O.C.). Judges at monthly meetings and orchid shows have more discretion than at award judging for minor flaws, malformations, blemishes, percentage of flowers open on the raceme, less than the prescribed number of flowers, etc. The plant however must still be free of pests and disease. Inflorescences with pollinated flowers will only be eligible for judging at monthly meetings not at shows or for awards. This could be important for *Stanhopeas* where flower life rarely extends beyond 4 days and is frequently much shorter.

The A.O.C. Standards for Judging handbook states that "all species with the exception of Australian Native orchids

(other than terrestrials) may be judged by the appreciation method and not pointed up". It continues to state that the appreciation method may be used where the merits of a superior orchid would not be accurately measured by the normal standards. What then does the appreciation method mean?

## Appreciation Judging

The appreciation method means that judges must compare the merits of the orchid being judged with others of the same variety or species or hybrid grex. If it is greatly superior then it presumably would, if being evaluated for an award, be granted a high AM or FCC. There is no need for each judge to allot points for shape, colour, etc., he or she must make a decision that the orchid in question is or is not worthy of an award, and if so, what award (FCC, AM, HCC, AD, DBM and Cultural (state award only)). This system of judging is designed for award judging and is slightly modified for show or monthly meeting judging. Here your *Stanhopea* may be competing with other *Stanhopeas* but more likely with species from any genus or if a hybrid with any hybrid outside the popular genera. This slight modification to appreciation judging is frequently called comparison judging.

## Comparison Judging

Comparison judging between say a *Stanhopea wardii* and a *Lycaste skinneri* "is this a better form of *Stanhopea wardii* than this is of a *Lycaste skinneri*?" This question however poses another problem which the judge must answer. The problem is how are the various aesthetic properties of the orchid to be weighted? Is a slight improvement in shape equal to a similar level of improvement in spike habit, or colour or floriferousness or whatever? Most senior judges I have spoken will agree that shape and colour are the most important properties they are looking for, and would concur that a weighting system of 30:30:10:10:10:10: for respectively shape, colour, size, substance and texture, floriferousness and habit, and arrangement of raceme is as realistic a reflection of the importance of these aesthetic properties as we are likely to agree upon. The need for weighting of shape, colour, etc has been recognised by the A.O.C. judging system and has been termed the General Standard.

## General Standard

While the Standards for Judging handbook states that all species other than Australian Native Orchids may be judged by appreciation, it clearly leaves species judging by the general standard. In fact, a slightly modified weighting system (30: 25: 10: 15: 10: 10) is specified for Australian Native Orchids. Because comparison judging must, by definition, involve the weighting of the different attributes of competing orchids, it could be argued that the general standard is appropriate for species judging. At any rate it is certainly desirable for hybrids and in fact the judging handbook requires its use "where no specific standard exists". The general standard requires that "colour shall be clear and glistening, not smudged or blurred and any markings are to be well defined and evenly distributed" and very importantly: "In all the above characteristics the flower should be outstanding for its type and for bi-generic or multi-generic each characteristics, other than size of flower, should be better than both parents."

If this were not difficult enough, there exists a strong feeling by many of the senior judges that hybrids should represent an improvement or worthwhile addition to the genus or alliance in question. They would see, for example, great merit in the cross *Paphiopedilum sukhakulii* x *P. rothchildianum* but little merit in *P. boxallii* x *P. villosum*. While this is not a stated requirement of the A.O.C. Judging Handbook it must be remembered that judging is what judges do and that the handbook is in a state of constant evolution. Accordingly the evaluation of *Stanhopea* hybrids will incorporate this important consideration. However all hybrids, no matter how complex, must ultimately trace their origins to species. It is to an evaluation of *Stanhopea* species we now turn.

### Judging of *Stanhopea* Species

It is clear from the preceding discussion that a comprehensive knowledge of *Stanhopea* species is needed with the range for each species variation in colour, size, shape, etc clearly defined. It should also be clear that this knowledge is nigh well impossible to obtain even for the very few *Stanhopea* specialists in the world. What we can do is collect photographs on



clones which have been awarded throughout the world together with the associated attributes re: size, floriferousness, etc. In addition to this species generally considered to exhibit superior qualities, and even photographs of average forms, for unless we know what an average form is, how can we recognise a superior form when it appears? Additionally many species are so rare that only one clone may be in a country, so it goes without saying that it should be recorded.

In the original report 35 plates are presented showing 13 awarded and or superior clones and 23 clones of either average merit, or because of rarity, of unknown value with regard to the range of aesthetic characteristics within that species. If any reader can help out with colour prints and data on flower characteristics of *Stanhopea* species these would be appreciated and valued additions to the original report held by the Registrar of judging of the O.S.N.S.W. Ltd. Clearly the more comprehensive the data base the more value it is to the judging process.

### Judging of *Stanhopea* Hybrids

With the genus *Stanhopea* there exists much variation in regard to flower count, size of flower, colour, petal and sepal conformation, lip and horn size, shape etc. If then judges are to recognise superiority of hybrids over parents and/or improvement in aesthetic qualities of the genus itself, they need to be familiar with both the desirable and undesirable characteristics of the genus *Stanhopea*. This examination is undertaken below with reference to shape (petals, sepals, labellum), colour, size, substance and texture and floriferousness. It must be stressed however that in the following discussion the comments are by no means meant to represent a definitive statement on how *Stanhopea* hybrids should conform. Rather they are ideas which show the potential of the genus and it is these improvements which both breeders and judges alike are continually seeking.

#### A. Shape and Substance

##### (i) Petals

For most *Stanhopea* species the petals are usually paper thin and reflexed. This is illustrated by *S. embreei* (Ref. 7) *S. tricornis* has petals of solid substance with no furling. The petals are forward projecting and have been used to correct reflexing. Width of petal can be incorporated through use of *S. connata* (14) or *S. tadeasi* (9) *S. hernandezii* (7) has good petal conformation width.

##### (ii) Sepals

Most *Stanhopeas* have broad lateral sepals but many reflex completely backwards. This backward projection of lateral sepals can be aesthetically pleasing provided balance and symmetry are maintained. This is well illustrated by the clone of *S. lietzei* 'Jill' (plate 1). There is good

balance between the labellum, the dorsal sepal and the lateral sepals and if the petals were more substantial and not so badly reflexed, it would be difficult to argue against the form of this flower. Nevertheless, the above type of shape has its primary appeal only if the flower is viewed from the side. From a frontal perspective there is little form to appreciate. Thus while reflexed sepals may not necessarily always be undesirable, the more traditional orchid placement of sepals adds balance and form to the flower. This is well illustrated by the clone of *Embreea rodigasiana* (plate 2). Moreover reference to *S. saccata* 'Libra' (14) clearly shows the superb form of the lateral sepals and dorsal sepal which are achievable on *Stanhopeas*.

##### (iii) Labellum and Column

The labellum is the focal point for the genus *Stanhopea* with the indigenous name for *Stanhopeas*, "toritos" or little bull, aptly describing the pronounced horns which are present on either side of the lip in most species. The lip can be divided into three (3): components: the hypochile — the bulky section where the lip joins the column; the mesochile which carries the horns; and the epichile — the shield shaped end of the labellum. Judges are on the lookout for weak epichiles and columns as shown by *S. embreei* (7) or the long hypochile of *S. costaricensis*. Good broad horns such as on *S. connata* (14) are looked for, as is a well balanced flat midlobe. An excessive gap between the epichile, horns and column as in *S. oculata* (14) is a weakness while good broad columns complimented by broad labellums are obviously desirable as in *S. insignis* (plate 3). Compare this with the weak lip of *S. oculata* (14) or the overly

compacted hypochile of *S. hernandezii* (7), or the huge labellum of *S. tigrina* (plate 4).

##### (iv) Overall shape of flower

*S. saccata* 'libra' (14) shows the well filled in shape which is possible *stanhopeas* even though the petals are narrow *S. rodigasiana* (plate 2) shows that good balance is not only possible, but also that it is very desirable.

#### B. Colour and Texture

The A.O.C. judging handbook requires that colour should be clear and glistening not smudged or blurred and any markings should be well defined and evenly distributed. You have only to look at *S. shuttleworthii* (plate 5) to see the clarity and glistening of the colour and markings. Yellows and whites should also be clear and bright as in *S. anfracta* 'Jill' (1) Hypochiles should show considerable lustre and colour as in plate 5. Bizarre markings such as on *S. nigro-violacea* (7, 14) will not detract provided they are clearly defined and reasonably evenly distributed.

#### C Size, Floriferousness and Arrangement

*S. wardii* 'Jill' (1) shows how pleasing and symmetrical flower arrangement can be. Size of *S. tigrina* and *S. nigro-violacea* can be 150-175 mm while 10 plus flowers are common with the smaller flowered species. Thus 5 100-125 mm and 3 or 4 150-170 mm flowers would not be unreasonable for judges to expect.

#### Awarded Hybrids

How then do the awarded clones measure up? Alas, we have none from Australia and only a few from overseas. Of these *S. Memoria Paul Allen* 'Lyn' AM/AOS at 81 points (14) and *S. Assidensis* 'Marges Pride' AM/AOS 80 points (AOS Awards Quarterly 1985 pp56) would illustrate the

con. p.32



Plate 5. *S. shuttleworthii*



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# THE HUMBLE GRASS ORCHID

## *Cymbidium suave*

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By Ed. Thorogood

I say humble, not because of any lack of beauty on the part of this orchid's flowers, I think they are fabulous, but because of its common name 'Grassie' and because it is the most commonly occurring epiphytic orchid in Australia. We started destroying them probably right from the very FIRST day that the FIRST people came ashore from the FIRST fleet, and we are still doing it today. Sad but unavoidable as, where a patch of trees had to be felled to make way for farm land, so with them down came the Grassies. Just think of the countless thousands that must have been destroyed in this way.

AN ENDANGERED SPECIES? RUB-BISH!!! If this was the case I wouldn't be able to take you to see any number of them within an hours drive from where I live at Scarborough, 40km north of Brisbane. When our family was growing up, a big part of the entertainment while driving through the bush was to play the game SPOT AN ORCHID. The most often spotted were *C. suave*. Its amazing how much more entertaining this sort of outing becomes and just how much interest is generated among the kids if they are on the lookout for orchids instead of squabbling in the back seat. A three or four year old yodelling out 'I see a grissallercrawlie' always provoked a good laugh. Those were the good old days.

Having spent very little time in the bush south of the Dorrigo Plateau I can only boast of having observed them from there north to Cooktown, although I saw a lot more *Cymbidium canaliculatum* var *sparkesii* up there than *C. suave*. 'THE NATIVE ORCHID GROWER'S BIBLE' Alex Dockrill's *Australian Indigenous Orchids*, tells us that they extend from south eastern N.S.W. north to as far as the Endeavour River in Cape York Peninsula. Alex doesn't say how far inland this orchid extends but my observation of it has been that it prefers to stay east of the Great Divide and that *C. canaliculatum* takes over west of that.

Some people think *C. canaliculatum* does not come down to the coast, it most certainly does.

### A HARD ONE TO KILL

We have the good fortune to live on the Redcliffe Peninsula, which is almost surrounded by the sea and where we rarely see a frost. It is an excellent area for growing most orchids. Our place is about half a mile from where the Scarborough jetty used to jut out northwards into the Bay. The jetty was considered redundant after the construction of the small boat harbour, and was demolished some years ago.

It was built a few years after the end of World War II, for the local sawmiller who needed it to bring cyprus pine logs ashore from Bribie Is. The girders and piles used in its construction were of brush box and iron bark which had been logged on Doug Stanton's property at Jimna. A mountainous area some 130km north west of Brisbane.

For years the trawling fleet had unloaded their catch over this jetty. The sea had broken over it in cyclonic weather with lots of salt spray blown on to it. Imagine my disbelief, when, over twenty years after it had been built, my number three son came home one day and presented me with a small plant of *C. canaliculatum* which he had dug out of one of the girders. It was alive and healthy and must have survived in that situation for all those years. They grow tough orchids up Jimna way.

As you can well imagine I lost no time in getting down to that jetty. He showed me where it had been growing out of a crack in a girder which hadn't had the sap timber removed. There were some old roots visible but that was all. There is just no way that seed could have found its way there after the jetty was built.

I have in my collection a plant of *C. canaliculatum* which was growing no more than a few kilometres from the sea at Hervey Bay. I have seen them growing close to the coast at Baffle Creek, north of Bundaberg, and a very healthy plant growing out of where a branch had broken off a cyprus pine on Bribie Is.

### THIS IS SUPPOSED TO BE

### ABOUT *C. suave*

Here I am rambling on about other things, but what the heck! Who said I couldn't? So long as its interesting reading. *C. suave* apparently needs more regular rainfall than *C. canaliculatum* while our other native *C. madidum* apparently needs even moister conditions. You don't find *C. madidum* growing in as dry a condition as the other two. I have found *C. madidum* and *C. suave* growing tangled up together in the same rotten log, under the most shady conditions I have even seen *C. suave* growing happily in *C. madidum* on the other hand is often found growing in even shadier conditions and loving it. Certainly I have seen it in full sun but this is not its preferred location.

*C. suave* does not like the prolonged dryer conditions experienced further west, but, as is the case with all orchids or plants for that matter, it will grow wherever the seed will germinate and the young plants survive. Just because you find a plant growing in a certain location does not mean that this is the best possible conditions for that particular species. I have found them growing in full sunlight and very deep shade and all had flowered nicely. The plants growing in the shady conditions appeared to be the most vigorous.

Temperature is certainly not a limiting factor in this orchids distribution as I have seen it growing happily in *Dendrobium falcostrum* conditions on the Dorrigo Plateau and equally as happily in the hot steamy conditions along the coast of North Queensland. Apparently it isn't choosy about the altitude either. Taking all these factors into consideration the natural assumption would be that it would be a pushover to grow in captivity. Think again brother. Think again.

### THE BEGINNING

Although I can remember my mother showing me grass orchids up in a tree at a very tender age both down towards Cedar Grove and in the Yandina area, my real interest in *C. suave* has only been of rather recent origin. This is rather strange as I



have never been a NUT GRASS fancier, particularly standards.

It all started at an 'orchid show at the Botanical Gardens, Mt. Cootha a few years ago. Entered in the Native section was this fabulous plant of *C. suave* with numerous inflorescences carrying a host of small crystalline clear green flowers. I must confess I was absolutely captivated. In discussion later I was horrified to learn that when an award was suggested to the Q.O.S. Judges, they said 'No! Put it up again next year'. Just how ridiculous can they be? To me it was perfection personified. I can't help wondering if those Judges had the attitude 'We just don't award that kind of thing' an attitude which has been experienced by quite a few Native growers. It never did get its award as I have been told that it died as a result of its owner repotting it.

Previous attempts on my part to grow this orchid had met with dismal failure. I had potted them up in plastic pots using cymbid mix as well as bark and charcoal, and the darned things just sulked and did nothing. Believe me, I took a real good look at what the grower of the plant at the show had done. He had used a two ft length of 4 or five inch PVC pipe. This made sense to me as I had seen the roots of both *C. suave* and *C. canaliculatum* growing down twenty or thirty feet in the centre of hollow trees which we had felled. The inside of these was always wet. This of course meant that the roots of these orchids never dried out.

I scrounged some lengths of various size PVC pipe and cut them into forty inch lengths. I had some strips of one inch by 18 gauge galvanised iron on hand. Bend a length of this into a circle to form a clamp (similar to a hose clamp) around the circumference of the PVC pipe, punch a hole at each end for the bolts to fasten the clamp over a double thickness of shade cloth to cover the bottom of the pipe. Hanging the pipe up was solved by cutting two half circular pieces and tightening them around the pipe by two bolts and attaching the wire hanger to these.

For a potting medium I used rotten wood from the host trees, charcoal and some pieces of polystyrene. I also used some of the completely broken down material from inside the host trees. It looks like dirt and I now believe this to have been a mistake and I won't use it again. All good plants that I treated in this manner are now flourishing for me. Please observe the fact that I said good plants. This is most important as any plant I have tried to grow which was not doing well in its natural habitat never became healthy again and are still struggling if not dead. You will also have a battle on your hands if you try to grow older plants which have developed canes of any length: try to get hold of younger plants before these develop, pre-

erably with live growing root tips,

Procuring plants as described isn't always possible, necessitating a compromise, particularly when I wish to obtain plants from different areas because of the quite remarkable difference in flower size and colour which can occur in a surprisingly short distance.

There is always the exception that proves the rule. We came home from a collecting trip a couple of years ago and because of a lack of suitable PVC pipe I put some small pieces into a couple of plastic pots using only peanut shells for potting mix. I never did get around to potting these properly and they decided to grow regardless. They did quite well and I later gave them to friends.

### ***C. suave*! UNIQUE AMONG CYMBIDS**

In the following statements, I stand open to correction. One can only speak to the limit of one's knowledge so here is where I stick my neck out. I believe *C. suave* to be unique among cymbids in three ways. I know of no other which makes canes. I know of no other which is capable of putting out a new lead from the base of the leaves on that cane and I know of no other which can completely take over an old rotten tree from inside, being capable of putting out plantlets from the cracks which have developed in that tree.

No doubt there is a technical name for these canes. I don't know what they are as I haven't come across a technical book which discusses them. Don't know what length they can reach. I have seen them 45-60cm long.

I came across a log in a gully up Jimna way which must have been on the ground for quite a number of years. It was a damp gulley with a flowing creek and there was plenty of shade from the canopy. Growing out of the side was an old *C. suave* which had canes 45cm or so long. One of these had fallen over on to the trunk. A new lead had developed from the base of the leaves and had established itself by putting out roots which had found their way into the cracks in the old log. So here we have the first travelling *Cymbidium*.

From time to time I have come across a very rotten old tree still standing which has been absolutely riddled with *C. suave*. They appear to be coming out of every crack and cranny. I formed the opinion that this orchid had the ability to form plantlets from the roots which have spread the full length of the tree. I discussed this recently with Nev Bone, (President of The Native Orchid Society of Qld.). He assures me that this is not the case. Apparently the orchid sends out rhizomes (for want of a better name) along with the roots. When this rhizome finds a crack through which it can reach the outside of the tree it establishes a new plant from that spot. It could

be argued that all of these smaller plants were nothing but seedlings. I don't believe so and support Nev's observations. A little scientific comment wouldn't go astray on this one.

If you happen to break off a cane, trim to six inches and pot in a piece of pipe leaving the base of the leaves level with the potting mixture. With any luck at all, if kept in moist conditions, a new lead will develop and you should have a strong healthy plant. It worked for me.

### **THE SITUATION TODAY**

I now have upwards of a dozen of these orchids growing in pipe as well as others in deep terracotta pots. A couple have filled their pipes and will have to face the hazard of being repotted next spring. Several others have sunk down into their pipes and will have to be pushed up to the top and more polystyrene put into the bottom of the pipes.

Most are the common or garden variety green. The further south you go from Brisbane the muddier the colouring becomes. I have a very nice green from the Sunshine Coast area. Some I haven't flowered yet. I only wish I had one as good as the one at that show and that I could flower them as well.

My two best plants are growing under 50% shade cloth in an open bush house. This, I think is completely coincidental as they were the two best plants to start with. The others are under *Spatulata* dendrobes in the big glass house. The roof is of clear fibreglass which has been up for five years. They would be getting far less light than the other two but flowering none the less.

### **HOW TO GET SOME**

If you would like to add some plants of *C. suave* to your collection, the best way I know is to drive out into the less frequented areas, brief your spotters on what to look for in the trees. When they cry 'TALLY HO' stop the vehicle and look the country over. If there are no old fallen trees in the paddock, forget it and drive on. When you find some *C. suave* in the trees and old fallen trees nearby, the correct course of action then is to see if you can locate the property owner's residence.

We all know how to approach a property owner of course. We drive in leaving the gate wide open, approaching the house at a spanking rate of knots scattering ducks, chickens and dogs to the four winds. Having observed your approach from some distance he will be waiting to greet you.

Don't bother to get out of the car if you don't have to. After saying 'Hello' as briefly as possible, (country folk don't like to waste time) start telling him your reason for honouring him with your visit as quickly as possible. While you are doing



this, make a point of throwing your unextinguished cigarette butt into the tinder dry grass alongside the car.

You will be surprised at just how rude country folk can be and how quickly you will be shown off the property. If you take the completely opposite approach you could have a friend for life and all the *C. suave* you could ever want.

The place to get your *C. suave* is in those old rotting logs and tree stumps. Don't feel guilty about taking them and think you are not being conservation minded. The next bush fire which will eventually come along would wipe them out anyway. The plants left in the trees will bloom again and scatter seed among the logs that survive the fire and so in time our younger growers will be able to go out and satisfy their yearning to own a *C. suave*.

## IT HELPS IF YOU KNOW SOMEONE WITH PROPERTY

I was lucky in that we had friends who have property with some *C. suave* still in the trees. If there was a plant in a branch twenty or thirty feet from the ground we found having our fourteen year old son along was very handy. He had a sling shot. We attached a half inch sinker to the end of a nylon fishing line. This was fired over the branch and by attaching a heavier line to the nylon we were able to pull a 2 inch silver rope over the branch. On the end of this was a trapeze bar on which, guess who, stood. The rest was easy. The other end was attached to the tow ball on the car and we just drove him up to the branch.

On one such caper the branch broke off just as I started to take his weight with the car. It crashed down narrowly missing him thank goodness. It's not really as dangerous as you might think really as the angle of the line would pull the branch towards the car as it comes down. Be careful if you try this one just the same.

## EASY ARMCHAIR SIGHTINGS

A few miles north of Nambour on the Bruce Highway, is the thriving little township of Yandina. On the northern outskirts, but still in the residential area is a large gum tree growing on the western side of the road. High up in this tree is a magnificent clump of *C. suave*. Isn't it a pity that no one has had the pleasure of seeing its flowers. If I had the money I would hire a helicopter at the right time of year. Maybe a high power telescope would do the trick.

A few kilometres further on but still south of North Arm, once more on the western side, is a large clump of tall trees. This is a rest area. Off the road a hundred metres or so is a swampy area on the southern end of this clump. In this stands a big old tree stump some thirty feet high. The tree must have broken off many years ago because sitting on top of this is a huge clump of *C. madidum*. •

# A SUPERIOR PARENT



URSULA ADAM x MT Hood  
FEB '74

Like most who grow orchids for pleasure after a while you come to the decision if I'm going to grow orchids then I may as well attempt to grow the best that are available. Like the old saying about race-horses goes, "it costs as much to keep a good one as it does a bad one" and this applies equally to orchids.

Once you make the decision to grow quality plants to produce quality flowers you have to obtain the plants that will produce those quality flowers, and herein lies the problem. How do you know or decide what plants do you buy? The first and most obvious answer is to buy a division of a particular plant you have seen in flower. This way you at least know what you are getting. This of course is not always practical as a division of the plant you have seen may not be for sale.

The next best alternative is to buy a mericlone of the plant you have seen in flower if this is possible. I think that most of us who have had experience with mericlones agree that they do not always flower identically from cultivar to cultivar (or plant to plant). The only other alternatives are to obtain a seedling cross the same as the plant you have seen, or a selfing of the plant and both of these alternatives maybe as different as chalk and cheese to the original plant you saw.

When I first started growing *Cattleya* orchids some ten years ago, I was fortu-

nate in that I consistently saw quite a lot of plants in flower. It was surprising how many of the flowers which appealed to me had one thing in common, namely that they had *Bc. Deesse* as one of the parents.

Although I am talking about plants I first saw in flower up to ten years ago and that is a lengthy period in terms of progress that has been made in flower quality in that time to my mind many of these *Bc. Deesse* crosses are still today more than capable of holding their own at any show. We still regularly see plants such as *Bc. Pastoral 'Innocence'* or *Bc. Mt. Hood 'Orchidglade'* winning first prizes at shows.

*Bc. Deesse* resulted as a crossing of *Bc. Ferrieres XC. Lamartine* and was registered by Vacherot-Lecoufle of France in 1947.

The *Bc. Deesse* varieties or cultivars which are most common in this area, 'French lace', 'Kerns', 'Charles', 'Perfection' and 'Rainer'. They are all five inch white flowers with a lemon yellow lip and most have a small purple fleck right in the centre of the lip this seems to be a trade mark of *Bc. Deesse* and it passes it on to some its progeny. Some varieties of *Bc. Deesse* have a pale pink on the back of the petals and sepals. It is a nice flower and worth having but in my opinion its value has been as a parent more so than as a show plant itself.



I have only seen white flowers of *Bc.* Deesse but in catalogues from orchid nurseries in Thailand there are regularly coloured photographs of a semi-alba flower named *Bc.* Deesse "No. 1".

Let us now look at some of the hybrids produced as the result of using *Bc.* Deesse as a parent.

In 1958 *Bc.* Berangere was registered by Vacherot & Lecoufle, it resulted from the crossing of *Bc.* Deesse and *C. hardyana* var. *alba*. *Bc.* Berangere is a pleasant 5" white flower with a fair amount of lemon yellow in the lip, the lip has the tiny purple mark in the centre which *Bc.* Deesse passes onto, a lot of its progeny. As recently as five years ago *Bc.* Berangere 'Niege' M/c was advertised for sale in one of the large American Orchid nurseries. It is now becoming outdated but in its day would have been at the top of the scale.

In 1956 *Bc.* Languedoc was registered again by Vacherot and Lecoufle, it being a crossing of *Bc.* Deesse and *C. Mem.* Rosemary. It is a flower of about five inches in size with a fair amount of lemon yellow in the lip. I know of three different varieties which are grown in Australia — these being 'Singapore Welcome', '222' & 'Sakorn'. None of these are up to the standard of pinks produced today.

Between 1960 and 1970 one could say were the golden years of *Bc.* Deesse as a parent, the 1961-1970 edition of Sander's List of Orchid Hybrids shows that 35 hybrids were registered which had *Bc.* Deesse as one parent. There are far too many to deal with each individually so I will deal with the better known ones in our area.

To my mind probably *Bc.* Mount Hood (*Bc.* Deesse X *C. Claris*) would be probably the most widely known because there are so many different varieties available, we probably all have or know of the varieties 'Mary' and 'Polar Bear', which are both white, or 'Selected Pink', 'Delco Point', 'Peppermint Stick', 'Thrupps' or 'Orchidglade' which are all 5" to 6" pinks with lemon in the throat. All of these are excellent flowers when they flower at their best and are capable of winning any show.

Beall's Orchid Nursery of the U.S.A. registered six hybrids between 1960 and 1970 which had *Bc.* Deesse as one parent and which they named after a mountain. These were *Bc.* Mount Adams (*C. Bob Betts* X *Bc.* Deesse), *Bc.* Mount Anderson (*C. Bow Bells* X *Bc.* Deesse), *Bc.* Mount Eldorado (*Bc.* Deesse X *C. Karae* "Lyn Sugiyama") *Bc.* Mount Hood (*Bc.* Deesse X *C. Claris*), *Bc.* Mount Juneau (*Bc.* Deesse X *C. Mount Baker*) and *Bc.* Mount St. Helens (*Bc.* Deesse X *C. Helen Durfee*). There were some of the best orchids of their times produced from some of these "Mounts".

We have discussed *Bc.* Mount Hood above, almost as well known was *Bc.*

Mount Anderson, there were several varieties of it around including 'Orchidglade' and 'Titanic' both being lavenders with lemon in the lip and "Norm Tator" which is very good large white with a fair amount of lemon in the lip.

Perhaps less well known but lacking nothing in comparison to *Bc.* Mount Hood and *Bc.* Mount Anderson is *Bc.* Mount St. Helens. There are two varieties around, one variety is 'Echo Valley' which is a 5" white with a lemon throat and the other is 'Susan' which is a 5" pink with a lemon throat.

Before leaving the "Mounts" that is the seven hybrids listed above registered by The Beall Orchid Company between 1960 and 1970 I think that it is fair to say that none of *Bc.* Deesse's progeny have been anywhere near as successful as *Bc.* Deesse as parents but some have contributed towards some of today's top show bench plants, eg. *Bc.* Mount Anderson is a parent of both *Bc.* Donna Kimura (*C. Princess Bells* & *Bc.* Mount Anderson) and *Blc.* Pamela Hetherington (*Lc.* Paradiso X *Bc.* Mount Anderson).

Continuing further with the *Bc.* Deesse hybrids perhaps the best known white is *Bc.* Pastoral 'Innocence', this is a cross between *C. Mlle.* Louise Pauwels and *Bc.* Deesse, it was registered in 1961. It is a 5" to 6" white with a lemon lip and has the touch of purple in the centre of the lip. At its best it is a top class orchid and will be in flower very soon (mid-winter).

Deesse, *Bc.* Mem. Hayley Vaughn (*Bc.* Deesse X *C. Claesiana*). *Bc.* Pink Debutante (*Bc.* Deesse X *C. Esbetts*). *Blc.* Coronet Bay (*Bc.* Deesse X *Lc.* Battle of Britain). *Blc.* Mem. George Butler (*Bc.* Deesse X *Lc.* Flying Cloud). *Blc.* Emmons Glacier (*Bc.* Deesse X *Lc.* Jay Markwell). *Blc.* Lonesome Cove (*Bc.* Deesse X *Lc.* Kaukuni). *Pot.* Hidden Range (*Bc.* Deesse X *Slc.* Lindores). *Bc.* Chesty Puller (*Bc.* Deesse X *C. Empress Bells*). *Bc.* Princess Teresa (*Bc.* Deesse X *C. Old Whitey*). *Blc.* Rosemary Hayden (*Bc.* Deesse X *Lc.* Blue Boy).

A *Bc.* Deesse hybrid enjoying popularity in the catalogues of large nurseries in Australia and Hawaii at present is *Blc.* Meditation. (*Lc.* Fedora X *Bc.* Deesse). This plant can flower either white or pink although most varieties are white. The varieties of 'King's Ransom', 'Queen's Dowry' and 'AAA' have been around for quite some time. In recent nursery listings, (mostly imported plants) three varieties of *Blc.* Meditation are advertised for sale these being 'Kyoku Nomura', 'King's Ransom' and 'Silver Sword'. Various catalogues describe *Blc.* Meditation 'Silver Sword' as a 9" some list it as a 10" exhibition white with greenish yellow in throat, full shape and heavy substance. It has been awarded an A.M. by the American Orchid Society. Considering it was first registered in 1974 it says a lot for the plant that large nurseries still consider it good enough to advertise three different varieties of it in one catalogue so long



*Bc.* Deesse 'Mr.'  
x *Bc.* Buttercup

There have been numerous other large whites and pinks produced which are well above average quality which have *Bc.* Deesse as a parent, included in these but by no means exhausting the list are *Blc.* Elizabeth Hearn, "Best Pink" being the best known variety in our area, it resulted from a crossing of *Blc.* Nacouchee and *Bc.*

after it was first registered.

To show that *Bc.* Deesse was not a "flash in the pan" as a parent after 35 registrations using it as a parent in the 1961 to 1970 edition of Sanders the 1971 to 1975 edition lists 25 registrations containing *Bc.* Deesse as one parent, the 1976 to 1980 edition lists a further 23 new regis-



trations with *Bc. Deesse* as one parent and the 1981 to 1985 edition lists a further 19 registrations with *Bc. Deesse* as one parent. As can be seen *Bc. Deesse* is still being used extensively as a parent.

You may think from the above that anything produced as a result of crossing *Bc. Deesse* produces whites or pinks, not so. Again I use The Beall Orchid company as an example, if you recall their price lists of some 5 to 8 years ago you may recall seeing *Pot. Tapestry Peak* as being extensively used as a parent. It was lavender or yellow depending on the variety being spoken of, yes, *Pot. Tapestry Peak* is (*Bc. Deesse* X *Pot. Gordon Siu*), those of you who know *Pot. Gordon Siu* know it is a very red purple colour, so it is interesting to note *Pot. Tapestry Peak* 'Golden Anniversary' is a large yellow. *Pot. Tapestry Peak* is the parent of some good yellows, eg. *Pot. Haystack Mountains*, *Pot. Fortune's Peak*, *Pot. Fabled Peak* etc.

Other notable yellows which *Bc. Deesse* has produced include *Blc. Kiska Island* (*Bc. Deesse* X *Lc. Daniel Markell*), *Blc. Fortunes Smile* (*Bc. Deesse* X *Blc. Fortune*) and *Pot. Golden Sands* (*Bc. Deesse* X *Pot. Lemon Tree*).

One *Bc. Deesse* hybrid which Carmela Orchids of Hawaii has promoted heavily is *Blc. Daybreak 'Camela'* (*Blc. Golden Slippers* X *Bc. Deesse*) it appears to be a nice large golden yellow flower and was featured on the front cover of the second last colour catalogue issued by Carmela Orchids. Plants of this are expensive at present being up to \$75 for a 5 inch pot.

There are new *Bc. Deesse* hybrids appearing frequently and whilst I personally have not seen most of these newer hybrids in flower two which could be of interest in the purple colours are *Blc. Cherry Paradise* (*Lc. Bonanza* X *Bc. Deesse*) and *Blc. Houston Bell* (*Blc. Mem. Crispin Rosales* X *Bc. Deesse*). Another plant of some note which is a *Bc. Deesse* hybrid is *Blc. Jane Paton 'Rene'* (*Blc. Harlequin* X *Bc. Deesse*) this is a 5" white which has a pink fringing around the edge of the petals. It is a good flower and worth having.

To my knowledge *Bc. Deesse* has not produced many above average semi-albas (Whites with a coloured lip). The only one which I am aware of is *Bc. High Sierra 'Lynn'* (*Bc. Deesse* X *C. Kittiwake*) which is a large white with a delicate pink lip with yellow in the throat. It is not commonly available at present although imported flowering size plants are available.

*Bc. Deesse* has had a very big influence on the large size *Cattleya* alliance flowers produced in the past twenty years and whilst we will probably notice a decline in the number of new hybrids which has it as one parent in the future I am sure it will be continued to be used as a parent for a long time to come.

Imagine the possibilities of a cross between *Bc. Deesse* and *Slc. Hazel Boyd* 'March Lion'. It would be an attractive flower if you could obtain the shape, substance and texture from *Bc. Deesse* and the colouring of *Slc. Hazel Boyd*. One can imagine a 4 inch flower of brilliant orange with red splashes on the outer edges of the petals and with a lot of red smudging in the petals and sepals. No doubt in the future such flowers will be readily available.

To my way of thinking *Bc. Deesse* has been the parent plant which has provided the type of flowers in quantity which I enjoy the most. Two lavenders which to me are producing good progeny are *C. Horace 'Maxima'* and *Lc. Prophecy 'Monterey'* but to my way of thinking they have a long way to go to reach the number of quality flowers produced by the *Bc. Deesse* hybrids. No doubt many other of you have other parent plants which you think have the potential to produce the type of flower you like best. If so, let it be known because the purpose of our Society is to enjoy our hobby, increase our knowledge and breed better plants to produce better flowers.

Good Growing. •

Ray Smith  
185 Bayswater Road  
CURRAJONG  
TOWNSVILLE.

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cont. from p.14

fined space without ventilation are very prone to fungus and disease attack. In nature, an orchid growing on a host tree is protected from strong winds by the canopy of the host and other trees around it, but even the most gentle breeze produces continuous air movement. In cultivation air movement is essential to maintain the health of the plants.

Draughts must be avoided. A plant in a constant or frequent draught will not flourish but will stagnate or deteriorate.

Temperature is of prime consideration and must be thought of in terms of both minimum and maximum requirements. Constant spells beyond either limit can be very detrimental to the health of the plant. All should be considered frost tender and although many species can be quite successfully grown without heat, they must be protected from frost. Many plants from our more northern areas grow in the mountains at higher altitudes which are significantly cooler than the adjacent, coastal lowlands.

Temperature is to be thought of in conjunction with air movement and humidity, both of which may be used to modify extreme temperatures.

The coastal strip has the very decided advantage of receiving the majority of its abundant rainfall during the warmer months of the year and having a winter that is relatively mild and dry. This is a situation that is essential in the plant growth cycle. Plants that are allowed to dry out in our high summer temperatures will become distressed very quickly, particularly on days of hot, dry winds; and, conversely, plants that are overwet on cold winter days and frosty nights will also fare very poorly.

While mounted plants will benefit from heavy watering during summer, more care must be taken with potted plants and potting media needs to provide excellent drainage. Roots that are kept overwet will deteriorate quickly. It is more beneficial to leave the pots on the dryer side and increase the humidity by wetting down the surrounding area. Mounted plants rarely have problems with drainage.

Light intensity plays a very important part in the growth and flowering cycle of the plant. Light requirement or tolerance varies dramatically from species to species and again in Southern Victoria we must compensate for the variations from the natural habitat. The days of our hot, dry summer are longer and less clouded and so are brighter, while our winter days are significantly shorter and much more cloudy. Therefore, while some shading is necessary for most species in summer, many will require the maximum light possible during winter.

The nutritional requirements are minimal. Plants in nature rely totally on the decaying, vegetative or organic matter that is washed into their root system by nature. In cultivation a frequent application of very, weak organic fertilizer is ample. Chemical fertilizers have a tendency to burn root systems, and to build up in porous potting materials to turn them sour which is detrimental to the plants.

Growth and flowering cycles are extremely varied and many have very specific seasonal requirements including a totally dry rest period. Others require to be well watered the year around. It is necessary to study each species and, as far as possible, to match its natural environment to produce the best from each plant. So, again, just because it's native does not mean it will grow without some help from you. •

H. Jacobs,  
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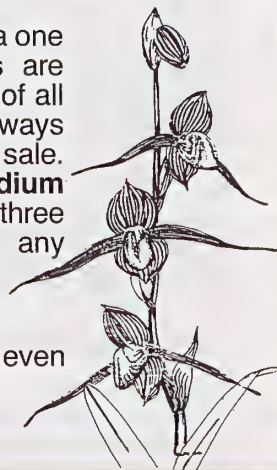
Collectors Corner is not a general retail nursery. It is a place for the hobbyist and general public to see and admire a range of items not available or displayed anywhere else in Australia. In every nook and cranny you will find something unique or unusual e.g. **50,000,000 year old fish fossils** to 60kg Amethyst Geods or tiny Masdevalias to 200 kg cacti.



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seen growing vertically on a slab. I also discovered in 1988 plants growing vertically on a rock face.

Under natural conditions *D. gracilicaulae* and *D. gracillimum* form large clumps the new growth arising around the base of the plants. The illustrations show both plants producing Keikis. Both species collected in 1988.

*D. aemulum* usually found growing on ironbarks and the brush box

in the Coffs Harbour area. The specimen illustrated was collected growing on a species of *Casuarina*.

Even under natural conditions variations from the normal can be found in our native dendrobium species. ●

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## TROPHIES AWARDED FOR 1988

This year 18 entries were received from 12 Orchid Societies or ANOS Groups. The standard of entries continues to improve making the final decision for the overall winner very difficult. As the judging has to be done from photographic slides, it is important that these be good and do justice to the flower and the plant as a whole. The entries were —

**QUEENSLAND O.S. HCC Award.** N.J. Grundon *Dendrobium* Hilda Poxon, 'Winifred Mary'.

**ANOS — Warringah.** Spring Show. W. & J. Upton. *D. Elegant Heart*, 'Warringah'.

**WOLLONGONG & DISTRICT N.O.S.** Spring Show, R. Wheeldon, *Sarcocylus* Melba.

**FAR NORTH COAST ANOS.** Spring Show, M.J. Symmons, *Den.* Our Native.

**O.C.S.A. Bicentennial Orchid Workshop,** A. Peck, *Den.* Elegant Heart.

**O.C.S.A. Autumn Show,** L. & R. Moore, *D. Hilda Poxon* 'Crozier'.

**O.C.S.A. Winter Show,** I. & C. Tucker, *D. johannis* × *D. discolor*.

**O.C.S.A. Spring Show,** L. T. & M. K. Nesbitt, Ptst. Hoodwink.

**ANOS CENTRAL COAST.** Spring Show, R. & S. Barrett, *D. × delicatum*.

**TASMANIAN O.S.** Spring Show, J.F. Smith, *Den.* Bardo Rose 'Bronilyn'.

**ORCHID SOCIETY OF W.A.** Winter Show, J. & D. Fleming, *Den.* Hilda Poxon.

Spring Show, G. & A. Hansen, *D. × delicatum*.

**O.S. of NSW.** Winter Show, S. Batchelor, *D. Aussie Child* 'Yondi'.

Spring Show. W. & J. Upton, *D. Elegant Heart* 'Warringah'.

**NATIVE ORCHID SOCIETY of SA.** Spring Show, B. Mules, *Den.* Aussie Utmost.

**ANOS NEWCASTLE GROUP.** Spring Show. G. Field, *D. Gloucester Sands* 'Kirra-lea'.

**ANOS SYDNEY GROUP.** Autumn Show. P. Eygelshoven, *Pterostylis* × *toveyana*.

Spring Show. W. & J. Upton, *D. Elegant Heart* 'Warringah'.

## CHAMPION AUSTRALIAN NATIVE ORCHID HYBRIDS OF 1988

N. GRUNDON

*D. Hilda Poxon* 'Winifred Mary'

W. & J. UPTON

*D. Elegant Heart* 'Warringah'

*D. Hilda Poxon* 'Winifred Mary' was a magnificent example of a developed hybrid style on a very well-grown plant with a great display of flowers, while with *D. Elegant Heart* 'Warringah' W. & J. Upton have achieved a breakthrough in breeding which should lead to some new and exciting hybrids in the future. It was decided that they be equal Champions.

Congratulations to all associated Groups and Societies. There really were some great hybrids entered this year.

Trophies will be dispatched to your secretary shortly and presentation dates for local N.S.W. Societies will be arranged. Entry forms for 1989 and information on a slide set of hybrids with commentary will be sent in April 1989.

Once again thank you for your participation in our efforts to encourage the development of new and better hybrids of our native orchids. ●

Ruth Rudkin, Hon. Secretary,  
on behalf of the Committee.



# Effects of Slow Release I.B.D.U. Nitrogenous Fertilizer on the Winter Growth of Young *Cymbidium*

Peter North-Coombes

## SUMMARY

Isobutylidene diurea (IBDU) was applied to young shadehouse-grown *Cymbidium* orchid plants at the start of winter. This nitrogenous fertiliser was surface-applied to the potting mixture in addition to the routine complete fertiliser. IBDU increased winter leaf growth of young leaves by an average of 40.2% (range 28.3%-79.8%) on plants treated with IBDU. Young leaves of untreated plants by comparison increased in average leaf length by 28.4% (range 20.2% -41.6%). Older leaves did not grow irrespective of treatment. Some varieties were more responsive than others. The residual effect of IBDU in boosting growth through to the summer season is recorded.

## BACKGROUND

The vegetative growth of cymbidiums benefits from adequate supplies of nitrogen (N) in balanced feeding programs. Two commercial growers in Victoria have suggested that treatment with N can assist immature shoots to make good winter growth and so develop well grown healthy bulbs capable of flowering in the following year (Hodgins, 1985; Johnson, 1986). The more usual N fertilisation technique is to supply a higher level of N during the seasons when plants make rapid growth, rather than in winter (Stolze, 1987). This is certainly the N fertilisation method practised by most of the established growers in Australia (Gallagher et al., 1987). Too much N can increase *Cymbidium* shoot formation at the expense of early flowering according to Bik and Berg (1984). Duckitt (1987) however, uses a high N regime to boost the growth of immature plants in the South African summer, but reduces the dose as the bulbs mature to flowering size.

Slow release N fertilisers are advantageous in increasing the growth of young shoots. It is possible that residual effects of these fertilisers may also be able to hasten the growth of young mericlones during the colder months of the year. Granular IBDU is a fertiliser claimed to have these effects on plants other than orchids (Walsh, 1978). IBDU is one of the best slow release N fertilisers that can be used to obtain plant growth responses in autumn, winter, and early spring, according to Walsh (1978).

Granular IBDU releases its N slowly through the activity of soil microbes. This action is dependent on soil moisture and temperature. Release at low temperatures

is slower than at warmer temperatures.

Dr. Jürgens-Gschwind (1974), citing research by Jung, reports that granular IBDU with a grain size of 2-4mm releases N at a much slower rate than fine IBDU (grain size 0.5-2mm) which because of its far greater solubility, rapidly releases its N. Fine IBDU is consequently rarely recommended for use on potted plants such as cymbidiums, which are subjected to regular watering and leaching.

Granular IBDU (2-4mm) is proposed by Jürgens-Gschwind (1974) as an excellent source of N for potted ornamentals. He reports that because granular IBDU is only slightly soluble in water, it is not easily leached. Plants are able to utilise between 50% and 70% of the N it contains.

## AIM OF EXPERIMENT

To determine whether IBDU is beneficial to the winter growth of young cymbidiums, the experiment described below was carried out in 1987 under open air shadehouse conditions, at Mount Waverley a suburb of Melbourne, Victoria.

## MATERIALS AND METHOD

Pairs of 5 *Cymbidium* varieties, at approximately the same stage of growth, were used in this experiment. One set of 5 varieties was treated on May 30, 1987 with granular IBDU (Gro-Max Easigreen® brand) containing 31% N. The other group of 5 plants was not treated.

The granular IBDU used in this experiment has a claimed 3-4 months' release period. It was evenly applied on the surface of the potting mixture (75% pine bark and 25% styrene foam) and tickled into the surface layer of the mixture. One-third of a heaped IBDU spoon measure (1.25 grams) was applied to the 10 and 11cm pots. Half a heaped spoonful (1.78g) was applied to the 12 and 13cm pots.

IBDU not being a complete fertiliser, is not on its own suitable for productive growth of cymbidiums (Nichols, 1980). In this experiment IBDU was under test as a growth booster additional to a previously applied complete fertiliser. The complete fertiliser used was Osmocote Plus® (3-4 months' release) usually applied in March, September and December. Dolomite is applied in March and September. Maintenance foliar sprays of magnesium sulphate and iron sulphate are applied from time to time as required.

The varieties under test consisted of pairs of *C. Valerie Brown* 'Eureka' mericlones (ex-flask November 1985), *C. Nonna* 'Goldilocks' mericlones (planted October 1985), *C. Mimi* 'Lucifer' mericlones (planted November 1985), back bulb propagations of *C. Rosalba* X *C. Nicky* (planted December 1985), and back bulb propagations of an un-named variety (planted February 1986).

The total length of the leaves of each plant was measured from each leaf's abscission point to its tip. Measurements were made on May 30, 1987, and on August 30, 1987, i.e. at the beginning and end of winter.

## RESULTS AND DISCUSSION

The single application of granular IBDU made on May 30, 1987 increased the leaf length of the five varieties. This is shown in Table 1.

The relatively small percentage increase in total leaf length was nonetheless quite visible as the IBDU treated plants were plainly taller than the untreated plants. This fact casts some doubt on the value of total leaf length as a measure of growth response to granular IBDU. This was confirmed through an appraisal of the leaf length increase of older leaves compared to that of the younger leaves. The visible increase was only in the growth of the younger leaves while the older leaves did not grow during the winter. Both treated and untreated plants behaved in the same way in this respect. Furthermore, none of the leaves on the oldest first-grown pseudobulbs of back bulb propagations made any growth. However the middle leaves of their new shoots, as well as the middle leaves of the mericlones, were those that grew and responded to granular IBDU. Consequently it is this class of leaf that needs to be compared to obtain a true picture of response to added N. This more meaningful comparison is made in Table 2.

From the measurements and observations, it is concluded that the application of granular IBDU caused young growing *Cymbidium* leaves to make quite a reasonable increase in growth during the winter, when used in addition to routine application of a complete fertiliser. Some varieties were evidently more responsive to added N than others. There were no observable differences in leaf health for the duration of this experiment, either with or without granular IBDU.

continued p.28



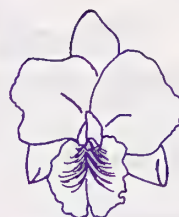


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C. Summer Stars 'May' x C. Queen Sirkitt Diamond Crown' — whites  
C. Penny Kuroda 'Spots' x Lc. Mishima Star (L. pumila hyb.) — Lav. flares  
Slc. Orlades Early Harvest x Blc Bouton D'Or 'Halcyon' — golds  
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L. crispata x Bc. Marblemount — unusual, perky pastels  
Lc. Persepolis 'Spendor' x Blc. Waikiki Sunset — orange bi-colours  
Blc. Bouton D'Or 'Lewis' x Slc. Hazel Boyd 'Royal Scarlet' — sunsets  
Lc. Gila Wildemess 'Nippon Treasure' x Lc. Scarlet Imp — Red flares  
Slc. Hazel Boyd 'Royal Scarlet' x Blc. Yellow Ball 'Sunshine' — scarlets  
C. venosa x C. granulosa — primary cross, yellow greens  
Lc. Scarlet Imp 'Irene' x Lc. Amberglow 'Magnificent' — gold purples  
Blc. Yellow Ball 'Sunshine' x (C. Patross x Tiffin Bells) — huge lemons  
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Phal. Texas Thunder x P. (Mount Kaala x Joseph Hampton) — whites  
Phal. Dawn Hunter x P. Gladys Read 'Snow Queen' — whites  
Dtps. Odoriko #102 x Phal. Gentle Thoughts — white/red lips  
Phal. California Glow x P. Romance 'Sweet Lisa' — pinks  
Phal. Sarah Loeb x P. Romance 'Sweet Lisa' — pinks  
Phal. Texas Thunder x P. (Doris Wells-Zauberrose x Comanche Rose) — whites  
Phal. (Lippestradt x Arai) x P. (Winter Maiden x Mariposang Puti) — pale pinks

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Blc. Yellow Ball 'Sunshine' x Blc. Sylvia Fry 'Wallacia'  
C. intermedia alba 'Casa Luna' strain — species  
C. guttata alba x self — species  
L. pumila 'Black Diamond' — mericlone 4 plants  
Blc. Bouton D'Or 'Lewis' x Slc. Hazel Boyd 'Royal Scarlet'  
Blc. Yellow Ball 'Sunshine' x Blc. (Tiara x Bouton D'Or)  
C. Venosa x Granulosa — Primary Cross — Yellow Green

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## A CASE OF MISTAKEN IDENTITY

Things aren't always what they seem, particularly in the orchid world. We humans "Ooh" and "Aah" over the delights and intricacies of the amazing blooms, but the sole purpose for the flowers' existence is the procreation of the species. There must be a mating of male and female cells. To achieve this, the flowers are colourful, thus attracting pollinating insects.

The following story is a whimsical look at the love-life of one particular species of *Ophrys*, commonly known as the Bee Orchid.

Spring had returned to the Mediterranean. Sap was rising in all the trees and plants; daily the flowers burst into riotous bloom, displaying all the glory of their jewel-like colours.

A branch of the Vespoidea bee family lived in this area. Our hero (who we'll call Vespo for short), in common with the other male bees of his family felt his fancy 'lightly turn to thoughts of love'. It was time to set about finding a mate.

He flew through jungle and over lowlands seeking his heart's desire, but to no avail. All about him he saw love-dances and matings, but where was his partner?

There came a day when Vespo's hopes had reached their lowest ebb: he settled despondently on a tall blade of grass and sat swaying in a gentle breeze. Suddenly a compelling odour assailed his nostrils. Instinctively he knew it to be a female of the species indicating her willingness for mating! Vespo became so elated he nearly fell from the blade of grass!

After a few exploratory sniffs he gaily winged his way in his prospective lady-love's direction. There she sat! Although he'd never seen a female at such close quarters before he had no doubt as to who she was, for as he flew closer the mating odour became so overpowering he almost swooned with desire.

She was clad in robes of green and yellow-gold trimmed with soft red-brown fur, and held aloft the glossy-blue mirror, so distinctive of her species.

She danced provocatively before him. Vespo's eagerness was so great that with a minimum of love-play he coupled with her. But there was something odd about her response; in fact, there wasn't any!

Try as Vespo might to persuade her to fly with him it wasn't to be: she appeared to be paralysed. The dancing hadn't been of her own volition for her lower limbs were firmly attached to the stem she rested on. Something was horribly wrong!

As Vespo sat nonplussed several of his brothers came along. When they saw his partner they burst into loud derisive laughter.

continued p.31

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**Table 1.**

Changes in total leaf length of young cymbidiums measured from abscission point to leaf tip – cm.

Variety	NO IBDU			IBDU Applied		
	30.5.87	30.8.87	Increase %	30.5.87	30.8.87	Increase %
C. Valerie Brown 'Eureka' (10cm pot)	110	121.5	10.5	72	89	23.6
C. Nonna 'Goldilocks' (11cm pot)	234	263.5	12.6	287	323	12.5
C. Mimi 'Lucifer' (13cm pot)	201.5	218	8.2	196	210	7.1
C. Rosalba X C. Nicky (12cm pot)	346.5	355	2.5	274.5	323	17.7
Un-named variety (12.5cm pot)	278	313.5	12.8	319	358.5	12.4
Total (cm)	1170	1271.5		1148.5	1303.5	
Average Increases %			8.7			13.5

**Table 2.**

Effects of granular IBDU on increase in growth of young *Cymbidium* leaves – cm.

Variety	NO IBDU			IBDU Applied		
	30.5.87	30.8.87	Increase %	30.5.87	30.8.87	Increase %
C. Valerie Brown 'Eureka'	50.5	62.5	24.8	41.5	58	39.8
C. Nonna 'Goldilocks'	114.5	143.5	25.3	115.5	151.5	31.2
C. Mimi 'Lucifer'	81.5	98	20.2	49.5	63.5	28.3
C. Rosalba X C. Nicky	123.5	160	29.6	128.5	177	37.8
Un-named variety	83	117.5	41.6	49.5	89	79.8
Total (cm)	453	581.5		384.5	539	
Average Increases %			28.4			40.2

**Table 3.**

Effect of granular IBDU on the increase in length of young C. Valerie Brown 'Eureka' leaves over 7 months (June-December).

NO IBDU			IBDU Applied		
30.5.87	4.1.88	Increase %	30.5.87	4.1.88	Increase %
50.5cm	158.5cm	214	41.5cm	162.5cm	292

## SEQUEL

All the plants in this experiment, except those of C. Valerie Brown 'Eureka', were repotted at the end of winter. The C. Valerie Brown 'Eureka' plants were given the usual complete fertiliser dressing in September and December 1987.

Early in January 1988, it was very obvious that the C. Valerie Brown 'Eureka' plant treated with granular IBDU in May 1987, had grown well ahead of its untreated counterpart. Bearing in mind that the latter initially carried more leaf than the plant treated in May (see tables 1 and 2), it was decided to measure the extent of this clearly obvious residual response. Measurements were made on 4th January 1988 (Table 3).

The IBDU treated plant grew at a much faster rate than the plant not given any IBDU. The growth-promoting effect of granular IBDU lasted at least to the end of December 1987, a full 7 months after treatment on 30th May.

The slow release of N from granular IBDU makes it an excellent fertiliser because its residual effect can boost plant growth and production in the seasons following its application (Walsh, 1978, citing the findings of Volk and Horn on turf grasses). The response of *Cymbidium* Valerie Brown 'Eureka' to granular IBDU

to the end of December, is in line with Walsh's statement. The magnitude of increase in leaf length was so noticeable that it is reported here for the benefit of readers. •

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## Cymbidium Club of Australia Annual Seedling Competition

This year's competition attracted 54 entries of seedlings to our annual competition. This would be a record for this Club. A pleasing feature this year was that entries submitted by new members, together with a number of Novice growers of the Club.

The competition is conducted on the growing season from March to October with the season being divided into two groups.

Group A being plants benched from March to July inclusive.

Group B being plants benched from August to October.

A winner of each group is selected by Judges from the Orchid Society of N.S.W.

The winning seedling is then selected before the meeting from the two group winners. This is the Judges choice.

At the November meeting members present pit their skills against the Judges and select the members choice.

Winning the competition for the third time, Ron Turtle benched an intermediate orchid, Little Big Horn x Rod Stewart, Hybridiser was Don Jones.

The colour of the flowers were white with an overlay of pink and a white labellum with a deep red lip, 15 evenly spaced flowers were on the spike. The Dorsal was slightly cupped with an overall width of 70mm. The Ventral sepal was 25mm, Labellum 21mm petal 23mm.



Winter Wonder New Era  
x  
Lunagrad

For the Members choice Winter Wonder New Era x Lunagrad, benched by Ted Lalor was selected. This was a Standard Cymbidium which is white with a pink spotted Labellum.

The Judges task was not easy •

A. M. Gall for Club Secretary,  
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con. from p.27

"You've been had, brother! She's not one of us, she's *Ophrys*! She fooled us, too."

Vespo clasped his forelegs over his ears to close out the laughter.

"She is, she is! She's my love!"

The others flew off, tumbling over and over in their mirth.

"Oh, well," thought Vespo, "Maybe tomorrow she'll be able to fly with me."

"You will, won't you?" he said aloud, as he gazed lovingly at the object of his affections. Neither by movement or expression did she indicate her interest.

Tomorrow Vespo returned — and tomorrow — until many weeks of tomorrows had passed. His love and impetuosity faded, and he began to see the light of his life through clearer eyes. Daily her finery shrivelled and lost its glowing brightness as she became larger and larger with child. Vespo by now had a sneaking suspicion that maybe, just maybe, his brothers *had* been right.

He saw others of his kind performing love-dances, but with Vespo it had become a case of 'once bitten, twice shy!' He just wasn't game to try again.

One day, months later, he flew to see his erstwhile mate. (This little guy knew the meaning of true love. After all, even if she was deaf and paralysed, he couldn't just cast her off like an old sock, could he? Not when she'd given him the sweetest experience of his young life.)

This time Vespo was horrified to see nothing recognizable of his former love: all that was left of her was a grossly distended belly attached by one leg to the plant stalk. His brothers were right, he had indeed 'been had!'

As Vespo looked at her sad remains a marvellous event took place. Her pericarp slowly split open from end to end, and a great shower of infinitesimal *Ophrys* seeds floated away on the wind, seeking hosts in their search for survival.

Sad for Vespo, for he never knew the joy of hearing the flutter of little wings, but great for *Ophrys* as Vespo and his relations are this orchid's only means of perpetuating its species.

If there's a moral to this story it would have to be: Look before you leap! •

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desirable qualities hybridists and judges are looking for.

### Intergeneric Hybridisation

In N.S.W. Wal Upton and Bob Deane have been involved with intergeneric hybridisation between *Stanhopea* and *Gongora Cirrahea* and *Polycycnis* genera. These genera have been used, amongst other things, to give longer flower life and longer more floriferous racemes which arch over the side of the pot. While this is a clear advantage for ease of culture it is yet to be seen whether flower quality will be greatly affected. Other genera such as *Houlletia*, *Kegelilla* and *Acineta* may also be used.

### Conclusion

*Stanhopeas* represent a particularly contentious genus to judge. Judges recognise that much of the appeal of this genus lies with the bizarre character and that this character must be retained in search for improved floral characteristics. That these objectives are not mutually exclusive is well illustrated by *S. Assidensis* 'Marges Pride' AM/AOS.



Plate 3 S. insignes

From the preceding discussion on shape and colour, some direction of future hybridisation is apparent, but how much improvement should judges expect for award recognition? By 1986 less than a dozen hybrids had been registered none of which had a primary hybrid as a parent. While much of this inactivity in hybridising can be attributed to the relative lack of commercial interest in the genus, it also points to the possibility of significant sterility barriers. Whatever the reasons however, progress is likely to be slow and this should be appreciated when the genus is benched.

In conclusion I would like to thank the many judges who have discussed with me the problem of judging species of primary hybrids. I extend my appreciation to Bernard Greer for use of many of his slides and in particular I thank Wal Upton for the time spent discussing this topic with me as well as for the many slides he so willingly lent me. ●

Bibliograph p.42





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con. from p. 9

was raised. This particular garden has found its way into gardening and orchid magazines all over the country because of its display of orchids. It belongs to Janet Raby who, in defiance of local advice, brought her treasured collection of tropical orchids with her from Sabah. After 12 years experience of growing orchids in the tropics, the English born Janet was determined to have a lush garden in Darwin — complete with flowering orchids. With its thick boarder of shrubs, frangipanni trees, palms and high, vine covered fences to protect it from "Dry" season winds, her garden developed around a cool, blue swimming pool. It was in sharp contrast with its surroundings. Darwin's somewhat transient population in the late 1960's found fence-to-fence lawns (which changed from "Wet" season green to crisp brown by early June) with the occasional banana, Aralia or Mango tree, to be the most convenient form of landscaping.

As she sits, surrounded by hanging Strapleaf Vandas displaying long stems of their huge, flat flowers, Janet smiles about the scepticism she met when she first tried to persuade Darwin people that they could grow flowering plants. "At one time my husband, Bill, mentioned to his colleagues in the Law Department that we had nine different families of plants flowering at that time in our garden — and no one would believe him," she laughs. As you glance around Janet's neat, lovingly planned tropical paradise, you can't help but think they must have missed a few flowering shrubs when they counted.

Cheeky *Dendrobium*, *Phalaenopsis* and *Cattleya* blooms peek out from the curtains of Spanish Moss (*Tillandsia usneoides*) and Button Orchids (*Dischidia*) which hang from the Frangipanni trees. Arandas and terete and semi-terete Vandas such as V. Ruby Prince, V. Tan Chay Yan, V. Nellie Morley and Aranda Yvonne Tan flower year-round in pool-side plantings. The main basis of these garden beds is the local "sand palm", *Livistona humilis*. This sand palm, which grows in the bushland surrounding Darwin, is now a protected plant. Judicious inquiries however, can reveal land development sites from which orchid growers can obtain permission to salvage the useful palm trunks. Lengths of these are set into the ground in a row, surrounded by charcoal. Vandaceous top cuts are then tied either side of this sand palm fence. At first the fresh top cuts must be protected from direct sunlight with Sarlon or palm fronds. New, thick roots quickly encircle the sand palm posts and secure the plants in their new home. Once established, the shade can be removed from the garden, as these plants require good sunlight to flower at their best. ●



# SHOW DATES

## NORTHERN TERRITORY

### Nightcliff Orchid Society Inc.

WINTER: Royal Darwin Show, 27/28/29 July 1989, 10am to 10pm.

SPRING: Keep Australia Beautiful Garden Fair, 12/13 August, 1989.

## SOUTH AUSTRALIA

### Gawler Districts Orchid Club Inc.

AUTUMN: Saturday 13th & Sunday 14th May 1989, Saturday 9am-5pm, Sunday 9am-4pm. Held at Gawler South Parish Hall, Adelaide Road, Gawler.

WINTER: Saturday 22nd, Sunday 23rd July 1989, Saturday 9am-5pm, Sunday 9am-4pm, Gawler South Parish Hall, Adelaide Road, Gawler.

SPRING: Monday 18th September-Saturday 23rd September. Held at the Elizabeth City Centre — Shop Hours.

### Murray Bridge & Districts Orchid Club.

SPRING: Friday and Saturday, 15th and 16th September, 1989, Friday 12 noon-8pm, Saturday 10am-5pm.

### Port Lincoln Orchid Club Inc.

WINTER DISPLAY: 2 days July 22nd & 23rd. Nursery hours. Held at Kallinyalla Nursery, Port Lincoln.

SPRING: Spring Show. 7 Days. August 21st-27th incl. Nursery hrs. Held at Kallinyalla Nursery Port Lincoln.

### Riverland Orchid Society

SPRING DISPLAY: At: Berri on the 10th of September.

SPRING: October Long Weekend — Sun & Mon. 12md-5pm. Orchid Display on the Monday only.

### The S.A. Orchidaceous Society.

AUTUMN: To be held at the monthly meeting. May 17th. To be held at Thebarton Reception Centre.

WINTER: July 29th & 30th 9am-6pm. To be held in conjunction with the South West Hospital Auxiliary. The proceeds are shared with the Auxiliary.

SPRING: September 18th to 23rd. 1989. The show will be held at Westfield Shopping Centre, Tea Tree Plaza, Modbury. S.A.

### South Coast Orchid Club of S.A. Inc.

WINTER: South coast Orchid Club Winter Show. 29th to 30th July, 1989 10am-4.30pm. Held at Marion Rec Centre, Oakland Rd, Marion.

SPRING: South Coast Orchid Club Spring show. 18 Sept to 23rd Sept 1989 9am-5.30pm. Held at Colonnades Shopping Centre, Noarlunga.

### Ararat Orchid Society.

SPRING: Ararat Orchid Society Show Friday Saturday Sunday 21st 22nd 23rd October 89 10am- 6pm. Held in Ararat Town Hall.

### Australasian Native Orchid Society, Victorian Group Inc.

National Herbarium Birdwood Avenue, Melbourne.

SPRING: Native Orchid Show September 30 11am-6pm, & October 1st 1989, 10am-4pm.

### Bendigo Orchid Club.

SPRING: 13-15th October.

### Gippsland Orchid Society.

WINTER: 26-27th August. Sale Tech. School. SPRING: 7th-8th October. Kildare College — Traralgon.

### Goulburn Valley Orchid Club.

SPRING: Goulburn Valley Orchid Club/ Bonsai Club & Tatura Garden Club Show. Sat. 30th Sept 1989, Sunday 1st Oct 1989 hours 10am-5pm.

### Hamilton Orchid Club.

SPRING: Fri & Sat Oct. 6th & 7th.

### Maribyrnong Orchid Society.

WINTER: July 19th to 22nd inclusive, High Point West Shopping Centre Rosamond Rd, Maribyrnong.

SPRING: September 9th & 10th, Marie Mill Community Centre Randall St., Maribyrnong.

### Maroondah Orchid Society.

SPRING: Nunawading Arts Centre Saturday 23rd Sept. 9am-10pm, Sunday 24th Sept. 9am to 5pm.

### Midlands Orchid Society.

SPRING: Midlands Orchid Society Annual Spring Show, 20th, 21st, 22nd October. Friday 20th 1pm to 9pm, Sat 10am- 9pm. Sun 10am-4pm.

### Mornington Peninsula Orchid Soc.

WINTER: 7th-12th August. Cranbourne Shopping Centre.

SPRING: 7th-8th October. Karingal High School.

### Northern and Eastern Districts Orchid Society Inc.

WINTER: 21st-22nd July 1989. 10am-8pm in St. Philip's Parish Hall, Galway Avenue, Broadview.

SPRING: 24th 25th 26th August 1989 10am-8pm, in St Philip's Parish Hall, Galway Avenue, Broadview.

### Orchid Species Society of Victoria.

AUTUMN: Country Societies Day; Sales & Autumn blooming orchid display, March 11th 1989 11am-3.30pm.

### Ringwood Orchid Society Inc.

WINTER: Tuesday, August 8th to Saturday August 12th 1989. During Shopping Hours. North Blackburn Square Shopping Centre, Cnr. Springfield & Williams Rds, Blackburn.

SPRING: Monday, October 9th to Saturday, October 14th 1989. During Shopping Hours,

including Late night shopping. Eastland shopping Centre. 171 Maroondah Highway. Ringwood.

### Sunraysia Orchid Club Inc.

WINTER: July 22nd and 23rd 1989 10am-4pm. Held in Greek Hall, Elizabeth St, Mildura South.

SPRING: Sept 14th to 17th Incl. Fri 2pm-9pm, Sat 10am-6pm, Sun 10am-4pm. Held as above.

### Victorian Orchid Club.

WINTER: 24-29th July — Southland Shopping Centre.

SPRING: 16th-21st October — Southland Shopping Centre.

### Wangaratta and District Orchid Society.

Technical School Staff Centre Wangaratta.

SPRING: September 23rd-24th Sept 23rd, 12midday to 8pm, Sept 24th 10am-4pm.

### Warrigal Orchid Society.

WINTER: Meeting Night 8-10.30pm. SPRING: 2 days. Sat. 14th October 10am-8pm, Sunday 15th Oct. 10am-5pm. Held at the Heidelberg Technical School Hall, Cnr. Waterdale Rd, & Bell Street, Heidelberg.

### West Gippsland Orchid Club:

SPRING: 29th/30th Sept.-1st October (3 days). Warrigal Art Centre.

WINTER: 5-6th August. Pakenham Hall.

### Western District Orchid Society.

SPRING: (2 days) 16th & 17th September 1989 Sat 2-5pm, Sunday 10am-5pm.

### Yarra Valley Orchid Society.

SPRING: 21-22 October 1989. 9am-5pm.

## NSW & ACT

### Albury/Wodonga and District Orchid Club Inc.

SPRING: Australian Inland Orchid Championship Show. Saturday & Sunday 7th & 8th October, Saturday 1-8pm Sunday 10am-4pm.

### Alstonville Orchid Society Inc.

SPRING: Uniting Church Hall, Main St. Alstonville NSW 2477. Friday 1st September, 1989, 9am-4pm. Saturday 2nd September, 1989, 9am-4pm.

### Ballina & District Orchid Soc.

WINTER: Ballina & District Orchid Society, Uniting Church Hall Cherry St, Ballina. 12th May, 1989 9am-5pm, 13th May 9am-5pm.

SPRING: Ballina & District Orchid Society, Uniting Church Hall, Cherry St. Ballina 8th Sept 1989 9am-5pm, 9th Sept 1989 9am-5pm.

### Berowra & Districts Orchid Society Inc.

AUTUMN: Meeting Night — Thursday, 20th April, 1989 8pm-10pm. Meetings held in Berowra Community Centre, Gully Rd. Berowra.

### Boolaroo Orchid Society Inc.

SPRING: Boolaroo Orchid Society Inc. Spring

## VICTORIA



Show. Garden City Shopping Centre, Park Ave, Kotara. Thursday 21st Sept 1989 8.30am-9pm, Friday 22nd Sept 1989 8.30am to 5.30pm, Saturday 23rd Sept 1989 8.30am-3pm.

#### **Casino & District Orchid Society Inc.**

AUTUMN: April 28th 9am-6pm, April 29th 9am-4.30pm.

SPRING: September 22nd 9am-6pm, September 23rd 9am-4.30pm.

**City of Lismore Orchid Society Inc**  
AUTUMN: 21-22 April, 1989, 9am-7.30pm, 23 April, 1988, 9am-3pm.

SPRING: 7-8-9-10th September 1989. 9am-7.30pm. Lismore City Hall.

#### **Coffs Harbour Orchid Society Inc.**

WINTER: Plaza Show Park Beach Plaza Coffs Harbour. Wednesday, 24th May, 9am-5pm, Thursday 25th May, 9am-9pm, Friday 26th May 1989 from 9am-5pm.

SPRING: Palms Centre Orchid Show, Palms Centre Coffs Harbour Mall. 11th Sept 1989 9am-5pm, 12th Sept 1989 9am-5pm, 13th Sept 1989 9am-5pm, 14th Sept 1989 9am to 9pm, 15th Sept 1989 9am-5pm, 16th Sept 1989 9am to 1pm.

#### **Eastern Districts Orchid Society, Inc.**

AUTUMN: 18th & 19th March 1989. 8.30-6.00pm & 8.30am to 3.30pm. Wondall Heights State School Assembly Hall, Wondall Road, Manly West.

SPRING: 2nd & 3rd September 1989. 8.30am to 6.00pm & 8.30am to 3.30pm. Wondall Heights State School Assembly Hall, Wondall Road, Manly West.

#### **Eastern Suburbs. O.S.**

WINTER: St Lukes Church Hall, Cnr Varna & Arden Sts, Clovelly. Monday (only) 19th June 1989 8pm-10pm.

SPRING: St Lukes Church Hall, Cnr Varna & Arden Sts, Clovelly. Monday (only) 18th Sept 1989 8pm-10pm.

#### **Eastwood & District Orchid Circle Inc.**

SPRING: Macquarie Shopping Centre, Center Stage. Monday 4th Sept 1989 1pm-5.30pm, Tuesday 5th Sept 1989 9am-5.30pm, Wednesday 6th Sept. 1989 9.00am-5.30pm, Thursday 7th Sept 1989 9.00am-9.00pm, Friday 8th Sept 1989 9am-5.30pm, Saturday 9th Sept 1989 9.00am-4.00pm.

#### **Far North Coast District Orchid Council.**

WINTER: 6th, 7th, 8th July 1989. 9am-9pm Thurs & Fri. 9am-12 Noon Sat. Lismore Shopping Square.

#### **Great Lakes Orchid Society Inc.**

WINTER: K Mart Shopping Village Show. Saturday 10th June Sunday 11th June, 1989. 9am-5pm.

SPRING: Forster Primary School 30th September & 1st October, 1989 9am-5pm.

#### **Gosford District Orchid Society.**

AUTUMN: Combined Central Coast, Autumn Orchid Show. 11th April until Saturday 15th April 89, 8.30am-5pm & 9pm Friday night. To be held at Bay Village Shopping Centre Bateau Bay.

WINTER: Gosford & District Winter Orchid Show. Monday 19th June to Saturday 24th June, 8.30am-5pm & 9pm Friday night. To be held at Marketown Shopping Centre Gosford.

SPRING: Gosford & District Spring Orchid Show. Monday 11th September to Saturday 16th September, 8.30am- 5pm & 9pm Friday

night. To be held at Marketown Shopping Centre Gosford.

Combined Central Coast Spring Show at Bay Village is the 4th Oct to 8th October.

#### **Grafton District Orchid Society Incorporated.**

WINTER: Grafton Shopping World. Thursday 18th May 1989 9am- 9pm. Friday 19th May 1989 9am to 8pm, Saturday 2nd May 1989 9am-4pm.

SPRING: Grafton Shopping World. Thursday 14th Sept 1989 9am-9pm. Friday 15th Sept 1989 9am- 8pm. Saturday 16th Sept 1989 9am-4pm.

#### **Griffith Orchid Society.**

SPRING: Spring Orchid Festival 2 Days. 9-10 September 1989 12-5pm Sat. 9am-5pm Sunday. Wade High School, Pool St, Griffith.

#### **Hastings River Orchid Society.**

SPRING: Hastings River Orchid Society. CWA Hall, High Street, Wauchope. 22nd Sept 1989 10am-8pm. 23rd Sept 1989 9am-1pm.

#### **Hawkesbury District Orchid Society.**

WINTER: Winter Show. Senior Citizen's Centre Richmond. Saturday 10th June 1989 12 Noon- 5.30pm. Sunday 11th June 1989 9am-5.30pm.

SPRING: Spring Show. Senior Citizen's Centre Richmond. Saturday 2nd June 1989 12 Noon-5.30pm. Sunday 3rd Sept 1989 9am-5.30pm.

#### **Hunter Region Combined Orchid Society.**

WINTER: Stockland Mall Jesmond Centre. Wednesday 19th July 1989 8.30am- 5pm. Thursday 20th July 1989 8.30pm- 9pm, Friday 21st July 1989 8.30am- 9pm, Saturday 22nd July, 1989 8.30am- 1pm.

SPRING: Hunter Region Combined Orchid Society. Lakefair Mount Hutton. Wednesday 27th Sept 1989 8.30am-5pm, Thursday 28th Sept 1989 8.30am-9pm, Friday 29th Sept 1989 8.30am-6pm, Saturday 30th Sept 1989 8.30am-1pm.

#### **Ku-Ring-Gai Orchid Society.**

WINTER: Ku-Ring-Gai Orchid Display, Westfield Shoppingtown Hornsby. Thursday 11th May 1989 10am-9pm, Friday 12th May 1989 9am-6pm, Saturday 13th May 1989 9am-3pm.

SPRING: Ku-Ring-Gai Orchid Show, Westfield Shoppingtown Hornsby. Wednesday 30th Aug 1989, Thursday 31st Aug 1989, Friday 1st Sept 1989 Saturday 2/9/89.

#### **Lidcombe Hospital Orchid Society.**

WINTER: Lidcombe Hospital Annual Winter Show. Ward 15, Lidcombe Hospital 26th July 1989 8.00pm.

SPRING: Lidcombe Hospital Annual Spring Show. Upper Recreation Hall, Lidcombe Hospital 16th Sept 1989 9am-3.30pm.

#### **Manly Warringah Orchid Society Inc.**

WINTER: Warriwood Show Warriwood Square, Warriwood. Thursday 1st June 1989 9am-8pm, Friday 2nd June 1989 9am-5pm, Saturday 3rd June 1989 9am-4pm.

SPRING: Mona Vale Show, Mona Vale. Friday 25th Aug 1989 9am-5pm, Saturday 26th Aug 1989 9am-5pm, Sunday 27th Aug 1989 9am- 4pm.

EXTRA SHOW: Manly Warringah Orchid Society Inc. Warriwood Show. 3 Days 21st, 22nd, 23rd September 1989. 9am-8pm Thurs, 9-5pm Fri & Sat.

#### **Maitland & Coalfields District Orchid Society Inc.**

SPRING: Maitland & Coalfields District Orchid Society Inc. 1989 Spring Show. Pender Place Shopping Centre, Church St, Maitland. Thursday 14th Sept 1989 8.30am- 9pm, Friday 15th Sept 1989 8.30am-8pm, Saturday 16th Sept 1989 8.30am to 2.30pm.

#### **Manning River Orchid Society Inc.**

WINTER: Thurs 29th June, Friday 30th June 9am-5pm, Sat 1st July, 9am-12md. Manning Mall, Taree.

SPRING: Mon 11th Sept, Tue 12th Sept & Wed 13th Sept 9am-5pm. Held in Manning Mall, Taree.

#### **Newcastle Orchid Society Inc.**

SPRING: Saint Andrew's Church Hall, Church St. Mayfield. 2304. Thursday 7th Sept. 1pm-8pm, Friday 8th Sept. 9.30am- 6pm, Saturday 9th Sept. 9.30am- 6pm, Sunday 10th Sept. 9.30am-6pm.

#### **O.S.N.S.W. Ltd**

WINTER: 13-17th June. Roseland Shopping Complex. Shopping Hours.

SPRING: 17th-24th September, Parade Ground, Royal Botanic Gardens 9am-5pm.

#### **Parramatta & District Orchid Society Inc.**

WINTER: Winter Show. Wednesday 26th July to Saturday 29th July, 1989. Shopping hours. Seven Hills Shopping Centre, Seven Hills Road, Seven Hills. NSW.

SPRING: Monday 4th September to Saturday 9th September, 1989. Shopping hours. Carlingford Court Shopping Centre, Carlingford NSW.

#### **Port Macquarie Orchid Society Inc.**

WINTER: Port Macquarie. Settlement City Shopping Centre, Port Macquarie.

Thursday 11th May 1989 9am- 9pm, Friday 12th May 1989 9am-

5.30pm, Saturday 13th May 1989 9am- 4pm.

SPRING: Port Macquarie Orchid Society Inc. 7th Annual Spring Show. Settlement City Shopping Centre, Port Macquarie. Thursday 14th Sept 1989 9am-9pm, Friday 15th Sept 1989 9am- 5.30pm, Saturday 16th Sept 1989 9am-4pm.

#### **Sapphire Coast Orchid Club.**

WINTER: Sapphire Coast Orchid Club. Winter Show 18-19 August. Merimbula Town Hall 10am-4pm.

SPRING: Sapphire Coast Orchid Club Spring Show. Norm. Honey Motors. Bega. 22-23 September, 10am-5pm.

#### **Shoalhaven Orchid Society.**

WINTER: Presbyterian Church Hall, Kinghorn St, Nowra. Saturday 15th July 1989 10.30am-5pm.

SPRING: Presbyterian Church Hall, Kinghorn St, Nowra. Friday 15th Sept 1989 12 Noon-6pm, Saturday 16th Sept 1989 9.30am-5pm.

#### **St George Orchid Society.**

WINTER: St George Orchid Society Winter Show. One night July 4th 1989, 8pm-10pm. Winter Show night is held on our meeting night in July — everyone welcome.

SPRING: St George Orchid Society Spring Trophy Night. One night September 5th 1989, 8pm- 10pm. Spring Trophy night held on our september meeting night. All welcome — Visitors' Tables.

continued p.38



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### **Sydney Orchid Society.**

WINTER: Winter show. One night 8th June 8pm-10pm, Remembrance Hall 220 Lakemba St, Lakemba.

SPRING: Orchids in Spring Normal shopping hours, Strathfield Plaza, Strathfield.

SPRING: 28th Aug-2nd Sept 1989

### **Tamworth Orchid Society Inc.**

SPRING: Tamworth Orchid Show, Tamworth Shopping World, Bridge St, Tamworth. Thursday 21st Sept 1989 11am-9pm, Friday 22nd Sept 1989 9am-5pm, Saturday 23rd Sept 1989 9am-5pm.

### **Tweed District Orchid Society Inc.**

AUTUMN: Tweed Mall Shopping Centre Tweed Heads. Thurs. 11th May 1989 9am-5pm, Fri. 12th May, 1989 9am-5pm, Sat. 13th May 1989 9am-3pm.

WINTER: Sunny Side Shopping Centre, Murwillumbah. Thurs 31st Aug 1989 9am-5pm, Fri 1st Sept 1989 9am-5pm, Sat 2nd Sept 1989 9am-2pm, in conjunction with the Tweed Banana Festival.

SPRING: Tweed City Shopping Centre, Sth Tweed Heads. Thurs 5th Oct 1989 9am-5pm, Fri 6th Oct 1989 9am-5pm, Sat 7th Oct 1989 9am-3pm.

### **NSW Regional Conference Orchid Show.**

SPRING: Sturt School — Wagga Wagga. Saturday 30th Sept 1989 1pm-6pm, Sunday 1st Oct 1989 10am-5pm, Monday 2 Oct 1989 10am-1pm.

### **Upper Hunter Orchid Society Inc.**

SPRING: Lancaster's, John St, Singleton. Friday 8th Sept 1989 8.30am-5.30pm, Saturday 9th Sept 1989 8.30am-3.30pm.

### **Western Suburbs Orchid Society Inc.**

SPRING: Western Suburbs Orchid Society Inc. Spring Show. Three days. Thurs, Fri Sat. 31st Aug 1989 1st & 2nd Sept 1989. Thursday 10am-9pm, Friday 9am to 5.30pm, Sat. 9am-4pm. Location: Burwood Plaza, Railway Pde, Burwood.

### **Wagga Orchid Society.**

SPRING: Conference Orchid Show 30th Sept to 2nd Oct. 1989, 10-5 daily. In conjunction with S.W. Regional Conference Sturt Public School.

### **Woodburn Orchid Society Inc.**

SPRING: Woodburn Orchid Society Inc. Spring Show. Woodburn Mem. Hall Pacific Highway. 15th Sept 1989 8am-5pm, 16th Sept 1989 8am-5pm, 17th Sept 1989 8am-5pm.

## **QUEENSLAND**

### **Aspley Orchid Society Inc.**

AUTUMN: Sat 13th May 9am-5pm Sun 14th May 9am-4pm. The Community Hall, Edinburgh Castle Rd, Wavell Heights.

SPRING: Saturday 16th Sept 9am-5pm Sunday 17th Sept 9am-4pm Sunday. The Community Hall, Edinburgh Castle Rd, Wavell Heights.

### **Atherton Tableland Orchid Society.**

WINTER: 10th and 11th July, 1989.

### **Ayr & District Orchid Society.**

AUTUMN: 11th & 12th May 8.30am-9.30pm on Thursday & 8.30-5pm Friday Mother's Day, Coutt's Mall, Queen Street, Ayr.

SPRING: Thursday & Friday during Water-Festival. Usually last week in September, to be

advised in June issue. Coutt's Mall, Queen Street, Ayr.

### **Bundaberg Orchid Society Inc.**

AUTUMN: 10th May-13th May, 1989. 8.30am-10.00 (Thurs); 8.30am-5.00pm (Friday), Civic Centre, Bourbong St. 8.30am-2.30pm (Sat).

### **Caboolture Orchid Society Inc.**

AUTUMN: Annual Autumn Show 18th to 20th May 1989. 9am-9pm Thurs, 9am-5pm Fri, 9am-2pm Sat.

### **Darling Downs Orchid Association Inc.**

AUTUMN: Thurs 27th to Sat 29th April 8.30am to 6pm. Sat 8.30am to 2.30pm. Q.C.W.A. Hall, 263 Margaret St, Toowoomba.

SPRING: Sat 23 to Sat 30th Sept. Sat 8am-9pm. Sun 9-5. Mon-Fri 8.30-6. Sat 8.30-2.30pm. TAFE College, Neil St, Toowoomba.

### **Emerald Orchid & Foliage Society.**

SPRING: Annual Spring Show 2½ days (Dates to be set). 6.30am-9.30am.

### **Gold Coast Orchid Society Inc.**

AUTUMN: Friday 31st March/Saturday 1st April 1989, Friday 9am-5.30pm — Saturday 8.30am-5.30pm. Judged Show, Display, Floral Art, Sales Table.

SPRING: Three days — Held in conjunction with the Gold Coast annual show. Judged Show, Display, Floral Art, Sales Table.

### **Gympie Orchid Society.**

AUTUMN: April 21 & 22 9am-9pm. 9am-4pm. Dendrobium Feature Show Civic Centre, Gympie.

SPRING: Spring Gold Rush. October 12th, 13th & 14th. Shopping hours, Goldfields Shopping Plaza — inter club display.

### **Hervey Bay Orchid Society Inc.**

AUTUMN: 28, 29th April Friday 28th. 9am-8pm. Sat. 29th 9am-3pm Hervey House (R.S.L.), Torquay Rd, Pialba.

### **Ipswich Orchid Society Inc.**

AUTUMN: 8th & 9th April 9am-6pm & 9am-5pm.

SPRING: 2 days — date to yet be decided in Sept. 9am-6pm & 9am-5pm.

### **Logan & Albert Orchid & Foliage Society.**

SPRING: Mt Tamborine. Saturday & Sunday 8.30am-5pm, 9am-4pm September.

### **Mackay & District Orchid Society Inc.**

AUTUMN: April 12, 13, & 14th. Shopping centre trading hours. Caneland Shoppingtown Mackay.

SPRING: September 28, 29, & 30th. Shopping centre trading hours Canelands Shoppingtown Mackay.

### **Maryborough District Orchid Society Inc.**

SPRING: Sept, 14-15-16. 14th-15th 9am-9pm — 16th 9am-2pm. Entry free. St. Pauls. Mem. Hall. Adelaide St.

### **Noosa District Orchid & Foliage Society.**

SPRING: 8-9 September 89 Memorial Hall, Maple St, Cooroy.

### **North Coast Orchid Society Nambour Inc.**

AUTUMN: 4th 5th 6th May 1989. 9am-9pm (4) 9am-5pm (5) 9am-2pm (6) Ray Grace Mitsubishi car show room Nambour.

### **Orchid Species Society Inc.**

SPRING: Sat 9th, Sun 10th Sept. 1989. Sat. 9am-5pm. Sun. 9am-4pm. Auditorium Mr. Coot-tha Botanic Gardens Mt. Coot-tha Rd,

Toowong.

### **Pine Rivers Orchid Society.**

AUTUMN: Kensington Village Bray Pk. 27th 28th 29th April 1989 8-30am-5pm.

SPRING: Pick & Pay Hypermarket Aspley 6th to 9th Sept 1989 8.30am-5pm.

### **The Queensland Orchid Society Inc.**

AUTUMN: 7th-9th April 9am-5pm. Mt Coot-tha Botanic Gardens Auditorium.

SPRING: 15th-17th September 9am-5pm. Mt Coot-tha Botanic Gardens Auditorium

### **Rockhampton Orchid Society.**

AUTUMN: 7th, 8th, 9th April, 1989. 9.00am to 9.00pm. Theme — "Orchid Fantasy".

SPRING: Dates at present unknown — Some-time in September.

### **Sunshine Coast Or. Soc. Inc.**

AUTUMN: 30th March-1st April. 9am-8 pm. Sat 1st 9am-3pm. Civic Cultural Centre Caloundra.

SPRING: 14, 15, 16 September. 9am-8pm but Sat 9am-3pm. Local Society members only. Civic Cultural Centre Caloundra.

### **Townsville Orchid Society Inc.**

AUTUMN: Friday 31st March, Saturday 1st and Sunday 2nd April 1989. Friday and Saturday 9am-9pm. Sunday 9am-5pm. City Council Administration Building Walker Street, Townsville.

SPRING: Friday 15th, Saturday 16th and Sunday 17th September 1989. Friday and Saturday 9am-9pm. Sunday 9am-5pm. City Council Administration Building Walker Street, Townsville.

### **Townsville District Orchid & Allied Plant Assn.**

AUTUMN: 11-12-13 May 1989, K Mart Plaza. Thurs 8.30am-9pm, Fri 8.30am-5.30pm, Sat 8am-12 noon.

### **West Brisbane Orchid Soc. Inc.**

AUTUMN: Autumn Orchid & Plant Show Saturday 22nd & Sunday 23rd April 9am-5pm. (Open show) The Auditorium, Mt. Coot-tha Botanic Gardens

SPRING: Orchid & Plant Spectacular (Charity Show) Saturday 23rd Sunday 24th September 9am-5pm. The Auditorium, Mt. Coot-tha Botanic Gardens. (Open show).

### **West Moreton Orchid Group Inc.**

AUTUMN: Friday 7th April to and including Sunday 9th April. Friday 9am-9pm. Saturday 9am-5pm. Sunday 9am-5pm. St Pauls C. of E Hall, Limestone St, Ipswich.

SPRING: West Moreton Orchid Group Spring Show. Thursday 14th September to Saturday 16th September, Thursday 8.30am-9pm. Friday 8.30am-5.30pm. Saturday 8.30am-4pm. Booval Fair Shopping Centre, Brisbane Road, Booval.

## **WESTERN AUSTRALIA**

### **Orchid Society of Western Australia (Inc)**

WINTER: O.S.W.A. Winter Show 29th-30th July 1989, 1pm-5pm Sat, 9.30am-4.30 Sun. Held in Collins Street Hall, South Perth.

SPRING: O.S.W.A. Spring Show 13th-16th September 9am-5pm. Held at the Metro Maddington Metropolitan Shopping Centre, Maddington.



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*Reproductive Biology of Species Orchids: principles and practice.*

Adams, P.B. ed. (1988).

93 pp., many line drawings & 2 pages of colour. *Orchid Species Society of Victoria & School of Botany, University of Melbourne.*

This is to our mind a timely publication which combines the expertise of professional biologists with the practical experiences of amateur orchid growers. The main text comprises a series of articles by different authors. Half of these are of a general nature including a guide to the propagation of orchids from seed, a consideration of the comparative fertility of self and sibling pollinations, and the

spectrum of fertility in Australian orchid species. The other articles are of a more specific nature, for example, on the effects of loading different *Cymbidium* species with numerous seed capsules, and the reproductive biology of *Dendrobium speciosum* and *Eriochilus cucullatus* respectively. Five appendices and a glossary complete the text. The appendices will be of practical interest to those intending to use this book as a practical guide for raising orchids from seed. They include a guide to aseptic culture methods, a summary of the relative ease of raising different species from seed, approximation germination and deflasking schedules for different species, and methods for raising terrestrial and epiphytic species from seed in vivo.

The book is biased, as one might expect, towards Australian native species but this in no way detracts from its relevance elsewhere. The text promulgates sound techniques for the raising of orchids from seed and provides easy-to-follow methods in simple, uncomplicated language. Jargon is kept to a minimum even in the more scientific articles. The relevance of raising orchids from seed when so many orchids are threatened in the wild is emphasised throughout and we welcome this approach.



*Zygopetalum mackenzii*

It seems inevitable that, in a popular book, some of the experimental results are somewhat oversimplified and qualitative. It would be good to see some quantitative classification of the results presented in any future edition. A standardised form for tabulating pollination results might have been usefully incorporated to allow comparability of results. We would also suggest that a future edition gives space to the allied areas of seed and pollen storage which are likely to be of increasing importance in horticulture and the conservation of threatened species. The question of symbiotic seed germination requires, we feel, a separate book to do it justice.



*Sarcochilus hartmannii*

We have found little to question in the text as a whole although, in the chapter on *Eriochilus cucullatus*, we would suggest that it is rash to infer from the squash technique alone that fertilisation must have occurred because of the large number of pollen tubes the authors have noted in the ovary. Other techniques should be used to confirm this observation. In many orchid species, a considerable time lag exists between entry of the tubes into the ovary and fertilisation occurring (Clifford & Owens, in press in 10th International Symposium on sexual reproduction in higher plants. Springer Verlag).

Despite these minor criticisms, we can heartily recommend this well-produced book to you. It will be a valuable addition to the library of all those interested in the raising of orchids from seed. Congratulations must go to the collaborators for filling a gap in the orchid literature and we look forward to future editions of this useful text. ●

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con. from p.32

Judging of the Genus *Stanhopea* Neville Schaefer.

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# Orchid Review

VOLUME 54 - NO.3



JUNE 1989





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*Phalaenopsis Hieroglyphica*  
(R chb. S.) Sweet

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CYMBIDIUM CLUB OF AUSTRALIA ANNUAL SEED-  
LING COMPETITION April issue 1989. Page 28 Cap-  
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# Phalaenopsis species of the Philippines

Jim Cootes



*Phalaenopsis schilleriana*

The genus *Phalaenopsis* is represented in the Philippines by approximately 20 species and 18 varieties, of which 14 species and 17 varieties are endemic, or only occurring in the Philippines.

For the most part *Phalaenopsis* are a low altitude genus, though they do occur up to 1,500 metres above sea level.

Of the nine sections, five are to be found in the Philippine archipelago. The sections are:-

- 1.) *Phalaenopsis* whose members include *P. amabilis* (L) Blume, *P. aphrodite* Rchb. f., *P. sanderiana* Rchb. f., *P. schilleriana* Rchb. f., *P. stuartiana* Rchb. f., *P. philippinense* Golamco and the natural hybrids *P. x intermedia* Lindl., *P. x leucorrhoda* Rchb. f. and *P. x veitchiana* Rchb. f.
- 2.) *Stauroglottis* which has two species, *P. equestris* (Schauer) Rchb. f. and *P. lindenii* Loher.
- 3.) *Fuscatae* which has the doubtful species *P. fuscata*. This species may not occur in the Philippines.
- 4.) *Amboinensis* whose only member is the exceedingly rare *P. micholitzii* Rolfe.
- 5.) *Zebrinae* Sub-section *Lueddemannianae* members of which include *P. pulchra* (Rchb.f.) Sweet, *P. reichenbachiana* Rchb. f. and *Sander*, *P. fasciata* Rchb. f. *P. heiroglyphica* (Rchb.f.) Sweet, *P. lueddemanniana* Rchb. f. and its

varieties *delicata* Rchb. f. and *ochracea* Rchb. f. *Zebrinae* Sub-section *Hirsutae* is represented by *P. pallens* (Lindl) Rchb. f. and *P. mariae* Burbidge ex Warner and Williams.

*Phalaenopsis aphrodite* is widespread over the whole of the Philippine archipelago whereas *P. amabilis* is only found on the south-west island of Palawan. These are both lowland species, growing up to about 300 metres. Both these species have large white flowers and beautiful green leaves which can attain lengths of 30 cm. by 7.5 cm. wide. In nature they grow in very well lit situations, sometimes in full sun, but always with 80-90% humidity. They frequently grow over creeks and near to waterfalls. Very easy to grow if the humidity, along with air movement is kept up.

*Phalaenopsis sanderiana* only occurs on the island of Mindanao, which is the second largest island in the Philippines. It is also a lowland species. The flowers range in colour from pinkish-white to rose purple and are delicate in texture. There is also an albino form. Flowers can be up to 8cm. across.

One of the most beautiful species to occur in the Philippines is the pink flowered *Phalaenopsis schilleriana*. What species grower could ever forget that magnificent specimen that was the Grand

Champion at the Roselands Show a few years ago, with its 3 foot tall branched spike covered in 6 cm. pink flowers. A truly wonderful sight. This too is a lowland species being fairly widespread over the central Philippines. An interesting point about this species is that it will not flower for a second time in Manila. To induce its flowering it needs to be sent to the mountains for three months so that the cooler weather can initiate the flowering hormones. If left in Manila the flower spikes produce baby plants and not flowers. *P. schilleriana* is an attractive plant even when not in bloom with its beautiful dark green foliage marbled with silvery grey on the upper surface. One of the best species from the Philippines.

*Phalaenopsis stuartiana* has foliage similar to the previous species but the flowers are white with maroon, green and brown spots on the lip and the inner half of the sepals. Another very desirable *Phalaenopsis*.

*Phalaenopsis philippinense* has only been recently described, 1986, and was originally thought to be *P. x leucorrhoda* though on further investigation it was found neither of the two parents of *P. x leucorrhoda*, which are *P. schilleriana* and *P. aphrodite*, grow in the area where *P. philippinense* comes from which is the mid north east of the largest island of Luzon. This species occurs at about 1,000 metres altitude.

Its flowers are usually pale pink through to white. The foliage is similar to the two previously mentioned species.

*Phalaenopsis equestris* is a small flowered member of the genus, which is very widespread throughout the Philippines. It also comes from Taiwan and its surrounding islands. The flowers are normally pink though there is a great deal of variation in the colour of the labellum, with several varieties being recognised. There is also an albino form.

*Phalaenopsis lindenii* is closely related to the previous species and in its natural habitat grows in very dense shade and at high altitudes



in the mountains of Luzon. This species has foliage similar to *P. shilleriana* and its allies. The blooms are white with 5 - 7 purple lines on all the segments. There is an albino form in which the stripes are yellowish green, this is very rare.

*Phalaenopsis lueddemanniana* and its many varieties are found all over the Philippine archipelago. They differ in the size of the flowers and the intensity of colour. The plants with the largest flowers come from the province of Surigao on the island of Mindanao, though the best colours come from Luzon. The flowers are about 5 cm. in diameter and have a base colour of white with magenta to amethyst-purple or reddish brown horizontal bars. The lip is carmine and yellow at the base. The leaves are light green and succulent. Another lowland member of the genus.

*Phalaenopsis pulchra* is similar but the flowers are solid purple and the tips of the sepals are white. In the wild this orchid grows in almost full sunlight but always very close to streams and creeks. A brightly coloured species and easy to grow.

*Phalaenopsis heiroglyphica* is a pure delight with its 5 cm. flowers which are cream based and marked with maroon or brown 'heiroglyphics'. This is a lowland species and only comes from two islands in the south of the Philippine archipelago.

*Phalaenopsis pallens* has 3.5 cm. light lemon yellow flowers which are transversed with thin reddish-brown or cinnamon coloured lines. This is a fairly widespread orchid which is commonly confused with *P. fasciata*, *P. ochracea* and *P. reichenbachiana*. Another lowland species.

*Phalaenopsis bartonii* is a recent discovery, and is quite distinct from its other relatives named above. The base colour of this orchid is a milky white and has brown bars around the periphery. In the wild this species grows in dense shade at low altitudes, and in cultivation likes a fair amount of water. It has only been found on the island of Palawan.

*Phalaenopsis deltonii* is also a recent find. It is an intermediate elevation - 500 metres - species and this one also grows in dense shade. Often mistaken for *P. mariae*. *P. deltonii* has a green background and almost sprayed with chocolate brown markings.

The labellum is amethyst to purplish blue.

*Phalaenopsis mariae* is another intermediate elevation grower - around 600 metres - also in dense shade. The fleshy flowers attain a diameter of 3 cm. and are white to cream coloured with maroon to chestnut brown blotches and wide bars. This species comes from the south of the Philippine archipelago and also occurs in Borneo.

## CULTIVATION

*Phalaenopsis* are an easy genus to grow providing a few simple rules are followed. The most important thing is AIR MOVEMENT, it must be constant as it minimises fungal problems. Probably the next most important factor in growing species *Phalaenopsis* successfully is HUMIDITY, the higher the humidity the better they love it. They also seem to prefer to get some morning sunlight. Winter temperature is also important - a minimum of 15°C - and not too wet, 20°C is much better because the plants will not stop growing. Shade should be about 80% for the summer and 50% for the winter. When watering the plants, always wet underneath the leaves, keeps red spider mites at bay. The best time to water is in the morning so that the plants have plenty of time to dry off before nightfall. It is very important that

NO water be left in the centre of the leaves of the plant. One method to alleviate this problem is to grow the plants at a 45° angle, so that the water cannot gather in the crown of the plant. Fertile often but WEAKLY. Half of what the manufacturer recommends is ideal. Use both organic and inorganic fertilisers and vary the brands you use, so that the plants get a variation in trace elements. No one brand of fertiliser is complete with trace elements.

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*Phalaenopsis lueddemanniana*



*Phal. deltonii*



*Phal. pallens (Philippines)*



# ODONTOGLOSSUM BICTONIENSE



I. *Odm. Bictoniense*

Our subject for the second species behind the hybrid article is the well known *Odontoglossum bictoniense*.

This species comes from fairly high elevation, 6-7000 ft, in Mexico, Guatemala and El Salvador. Interestingly it was the first species of the genus introduced to cultivation.

Unusual for an *Odontoglossum* it is often terrestrial in growth habit, this is obvious from the heavy, fleshy root system these orchids have. You will also find it growing on rocks, trees and cliffs.

When originally discovered it was never very common and later when the area it came from was devastated by earthquake, collectors thought it to be extinct. However years later it was rediscovered in Mexico and has become well distributed in cultivation. Unfortunately it is now somewhat rare in its natural habitat.

*Odontoglossum bictoniense* is a very variable species with several varieties existing in cultivation, most now seed raised in nurseries. One of the most lovely is var. *Alba* AM/RHS which has brown petals and a pure white lip.

Var. *San Bar Alba Purity* is another glorious form having green petals and a white lip. Similar but yellow with a white lip is var. *Sulphureum*. Then of course you have the normal coloured forms, as shown in the photograph, which can also be variable.

Whether because of its rarity or because hybridizers didn't see the

value in the species, it was barely used in breeding until the early sixties. Only the primary hybrid *Stamfordiense* (x *Odm. Uro-skinner*) was registered in 1909.

It was 1963 when I began my journey into orchid growing at David Sanders Orchids in the U-K, which by chance is the year the next *Odm. bictoniense* hybrid was registered. David Sander named the cross *Odm. Dainty* (x *Odm. Lucilla*). I remember that plant in flower and just how apt that name was.

*Odm. bictoniense* has proved to be somewhat promiscuous particularly as a pod parent and has bred freely with other genera. During the sixties hybrids were registered, made with *Odontioda*, *Oncidium*, *Brassia*, *Miltonia*, *Compactia* and

*Onc. varicosum*) yellow with red spots and a large yellow lip, very showy and fertile too. One of its progeny received an AD/AOC in Tasmania. In the U-K *Odtcm. Thelma-Ku* (x *Onc. marshallianum*) was recognised by the R.H.S. with var. "Gaytarn" receiving an AM/RHS last year. In the U.S.A. Everglades Orchids received an AM/AOS for their cultivar "Everglades".

Using the pink species *Oncidium ornithorhynchum* with *Odm. bictoniense* produced *Odtcm. Elske Stolze*. I have flowered many of these as very young plants, all have been pink with dark red lips, somewhat small in the flower as you would expect and not at all scented as hoped.

A slightly more advanced line of *Odontocidium* is represented by *Odtcm. Bittersweet* (x *Odtcm. Crowborough "Plush"*). The original cross made in the seventies by the late Dr. M. Orenstein was diploid but having discovered a tetraploid clone of *Odtcm. Crowborough Plush*, Andy Easton remade it with even better results. The intense rich colours and mass display of flowers will surely find this cross gaining many awards in the future. The illustration shows Milton Carpenters awarded clone var. "Cherry Chip" AM/AOS.

In New Zealand last year I was thrilled to see some seedlings of a new cross *Otcm. Golden Trident* (x

continued p. 28



II. *Odm. Burghardt Holm*

a few besides. Some of these remained fertile in the next generation and have bred on but a fertility barrier in the second generation is quite common. Obviously in this brief overview we can't cover the 70 or so personally.

*Odm. bictoniense* seems particularly compatible with genus *Oncidium* and several notable hybrids have been registered to date. In fact over 20 different *Oncidium* species have already been combined with *Odm. bictoniense* so a great pool of primary hybrids is at the disposal of the hybridist, offering tremendous scope in colour, shape and size.

A few worth looking at are *Odontocidium Dena Reinikka* (x



III. *ODCDM. Bittersweet "Cherry Chip" AM/AOS*



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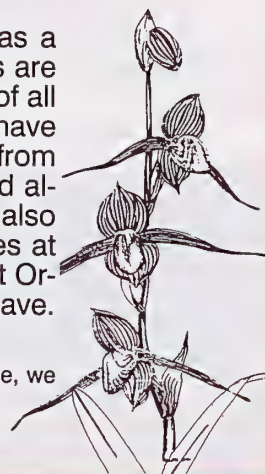
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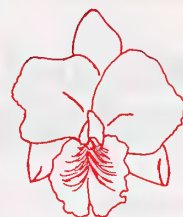


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# THE P.H. FACTOR

The letters PH are used to indicate the Acidity or Alkalinity of a medium. One such medium is the compost used to obtain growth and flowering in plant life, which includes Orchids. It is measured on a scale that runs from 1-14 as shown below.

Neutral being 7, is the most used indicator factor to start from, with progression towards 14, indicating higher fields of Alkalinity and from 7 numerically downwards to indicate a move to more Acidity. Some water supplies are controlled close to PH 7 (Sydney), but care must be exercised because we have observed very different readings in some other areas.

The state of the medium can be rearranged by the adding of Acids to adjust toward an Acid medium and Alkalies toward Alkalinity, depending on your need.

We use Phosphoric Acid to adjust our Acidity and either Bi-Carbonate of Soda or Calcium Hydroxide for the Alkaline adjustment. To test the state of your medium you may procure from a chemical retailer, litmus paper, Multi-coloured PH sticks (brand name "Mark Peloupa"), or a small instrument sold by I.C.I. Scientific Instrument Dept. that is simply immersed in the liquid at the base, then gives a numerical read out. Special chemical indicators in liquid form that when mixed with your solution will change colour, and the colour gained then compared with a colour chart that comes with the test kit (these may be obtained from any good Aquarium Dealer fairly cheaply).

Just as light, water, air flow, altitude, warmth and other environmental factors often referred to as some of the essentials needed by plant life, to develop their optimum of growth flowering and seed production so equally essential is the need to balance the PH in your pot or your growing medium whatever your choice may be.

If the PH is incorrect, then the salts being fed to your plants are simply not made available as a gaseous food the plants can assimilate, but either pour out the bottom of the pot, or build up in your medium as solid salts, often causing a white discolouration around the water outlets of the pot.



Charts have been available for a long time, one of which I will include, to indicate the optimum PH that is necessary to release the maximum of our needed minerals and trace elements.

We agree, as so many others do, that the PH 5.0 to PH 5.8 is correct. For most Orchids to use the available fertilizer efficiently. In our laboratories, where seedlings are maintained for quite some time in a captive environment, and with only the nutrient originally made available. The above recommended PH is maintained. If a 'slip' occurs we can always see the symptoms that develop such as, growth stunting, non root development, discolouration of the foliage, and breakdown in the Agar based medium.

Many losses and problems can be traced back to the misuse of the PH factor as was demonstrated to us several years ago, when using an Alkaline balanced fertilizer (PH 7-8) we nearly lost much of our Stud collection, and did in fact only regain control when using Bill Johnstons recommended Formula of 'Aquasol' plus Iron Chelates and Magnesium Sulphate (Epsom Salts) and adjusting our tank to PH 5-8 at every weekly feeding, only then did we observe the return to good health to those fortunate to survive the ordeal.

We made no other conscious changes to our plants that would not allow us to identify the problem. The only break from this programme has been the introduction of a product of a Hormone based 'additive' within the last six months, called 'Vegemax'. It is not the intent of this article to suggest that if an Orchid collection is growing in a satisfactory manner, when compared with other Local collections, that there is a need to change your methods. However it is the intent of the author to attempt to develop an awareness and questioning of the extreme importance of the balance of the PH factor within your growing medium and hopefully present the experience of seeing your plants Languish instead of giving

the pleasure of a healthy collection. A simple illustration would be, trying to grow Azaleas or Camellias, Daphne, etc in a previously well limed soil, as most home gardeners would be aware, your plants would not survive after a yellowing of the foliage and all you would have done is change the PH from Acid to Alkaline, so after a slow loss of foods your plant dies.

Unfortunately we in the World of Orchid Culture do not always receive such notice by a sudden change in our plants until the damage is done because of the slow growing progress that are the habit of most Orchids. Awareness is also of importance, because we have many normal ingredients to choose from when connecting our Compost. Such as Pine Bark, Tan Bark (if available) Peat Moss, Tree fern fibre, bracken fern, etc and all of these are of an Acid nature and so do not always present difficulty. However caution must be the keyword because too Acid a balance will cause a problem as equally as the Alkaline balance may.

The only sure way is to test your medium or fertilizer liquid regularly. This may be done with one of the test units mentioned earlier. I am of the belief that many problems often put down to over or under watering, wrong environment, lack of correct temperatures, insect infestation, old potting medium etc could just as easily be caused by maladjusted PH.

If the author can cause a little questioning and experimentation of his contemporaries then our Experience and time in writing this article will not have been in vain.

Jack Williamson  
Kaldoon Orchids.





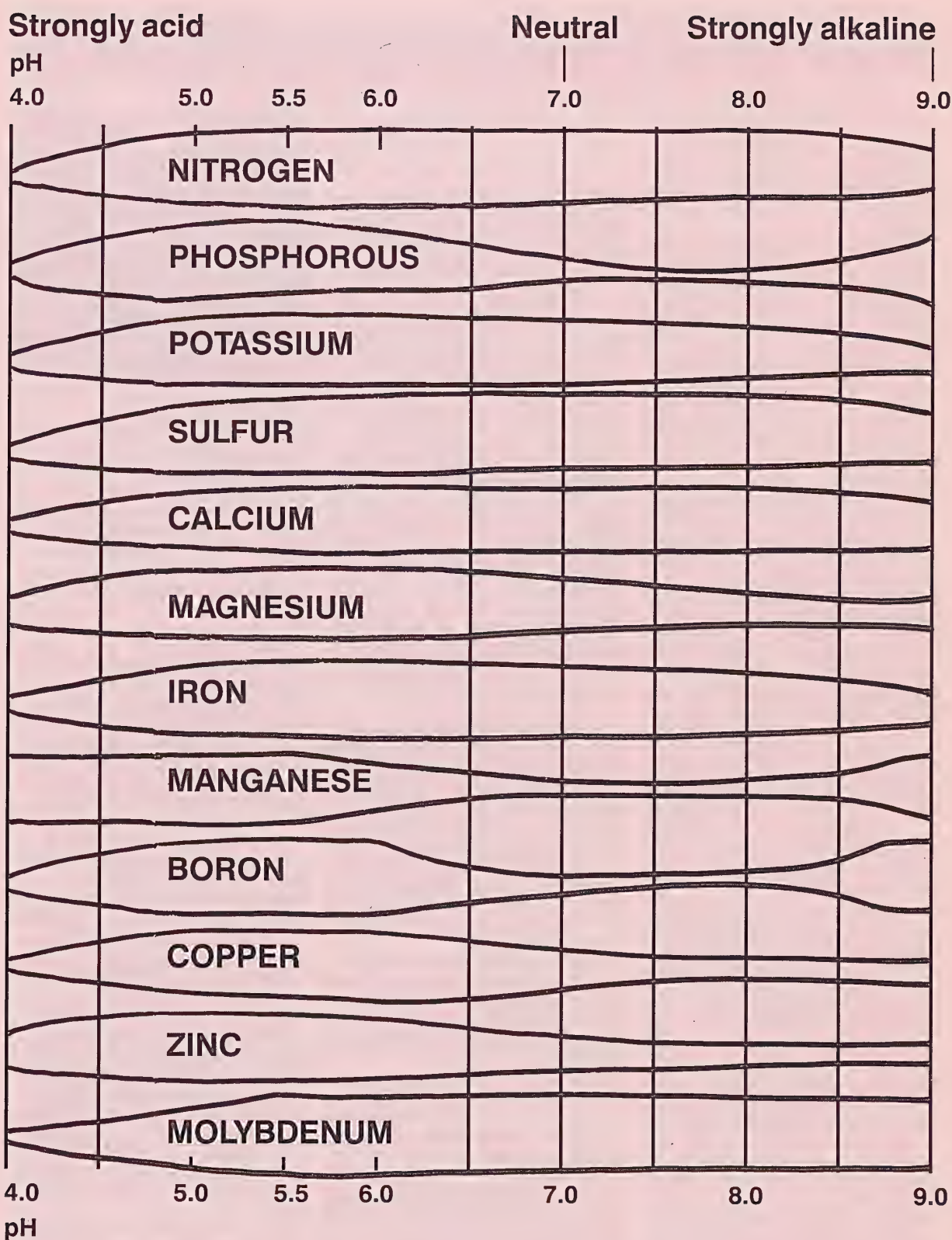


Fig. 4.6 The effect of the soil pH on the availability of plant nutrients in organic soils. (From Lucas and Davis, 1961.) The availability of the elements is indicated by the width of the bands.



# From an Orchid Lover's Bookshelf

An Article  
by Jo-Ann C. Burke

One of the joys of orchid involvement is in the acquisition of literature (books, pamphlets, catalogues, etc) relevant to our chosen passion.

Early in my own orchid growing days (20 odd years ago) I read a library book titled 'Out West Growing Cymbidium Orchids and Other Flowers', the story of El Rancho Rinconada, by Louis M. Boyle, Snr. (Times-Mirror Press, Los Angeles, U.S.A. — 1952).

The book is dedicated to the 'memory of my mother and father — they both loved their garden and flowers'. Could there be a more apt dedication?

This book came into being because the author 'became a victim of rheumatoid arthritis ... obliged to curtail (my) activity in more ways than one'. Originally intended as a record of experiences in growing cymbidium orchids out-of-doors in Southern California, it developed into a much broader canvas.

Acquaintance with Spanish-speaking classmates led to the author hearing about the old ranchos, and fostered the ambition to one day have a rancho of his own.

The 500 odd pages are filled with a veritable treasury of photographs and text not only of orchids, but of '... the flower industry, flower shows, the seed-growing industry, the Men's Garden Club, and a little of the early West'.

Many avenues of orchid interest are explored in this 'gem', such as Let's Talk It Over (joining an orchid society), discourses on some of the older varieties of cymbidium orchids, learning by experience, sick plants, personal views on culture, and other topics.

I realize that all these subjects have been treated in various ways by many writers: after all what is really new? But gathered together in this one volume they form an eminently readable account of Louis Boyle's horticultural experiences, and as with any book of note the writer creates an empathy with his readers. It took me almost ten years of searching to locate a copy for sale. Believe me, when I did, I pounced on it with wild expressions of delight!

Born in Boston, Massachusetts, U.S.A., Hugo Freed spent his early

days in the Pacific Northwest. For many years a successful insurance broker, he had been educated in New York and at the Sorbonne in Paris.

His father was a travelling salesman. The family finally settled on a large parcel of land near Seattle, Washington. It was here that Hugo Freed began to first 'develop an active interest in plants and flowers', spending much time tending the garden with his mother.

Hugo Freed's brother Arthur was a song-writer with numerous hits to his credit including 'Pagan Love Song' and 'Singin' in the Rain'. In 1938 this talent led to a career as a motion picture producer; he received in 1951 an Academy Award for best motion picture as 'producer of 'An American in Paris' and again in 1958 for 'Gigi'. In 1947 when Arthur acquired an orchid range in Malibu's Zuma Canyon Hugo became the managing partner.

Hugo Freed's name is synonymous with the development of the Phalaenopsis orchid in particular. In his book 'Orchids and Serendipity' (Prentice-Hall, Inc., New Jersey, U.S.A. — 1970) he shares with his readers little-known facts about orchid history. He writes about the mid 1770's when people became aware of the aesthetic uses of orchids, and of the modern areas of orchid knowledge.

In the chapter 'The Orchid Ark' we share Hugo's pleasure in the little humming-bird he christens 'Pepito', and his placing of Cattleya blooms for Pepito's nectar dessert each day.

We read of his personal joys associated with orchids, of life on the orchid range, of understanding the often little-understood orchid, and of visitors to the range.

It's interesting to read that for small seedlings freshly deflasked, a special seedling bark mixture of small chips was used. In a 10 cm plastic community pot 10 to 20 seedlings would be placed, and allowed to grow to a stage for individual potting on. (Almost 20 years on some growers use this same method.)

For the poets among us there is a slim booklet of verse titled 'Orchids in my Greenhouse, Crabgrass in my Lawn', self-published by Clarence S. Lindsten in 1973. Verses touch on various aspects of retirement, nostalgia and gardening. Two poems that will strike a chord in the hearts of orchid growers are as follows:

## THE STANDARD

The Judging Standard tells us that  
Most orchid blooms should be  
Of over-lapping rounded form,  
With pleasing symmetry.  
But some fine day, they'll likely say  
Much to our great despair,  
That they've re-wrote the Standard  
and  
The form must now be square!

and

## RELATIVES

Said the Brasso Digbyana to the  
great big showy Catt,  
'Stop acting so superior, and  
remember where you're at.  
You're in among your relatives, the  
Laelias and me,  
And if it wasn't for our bloodlines,  
Boy, how common you would be!

Another booklet is 'Orchids at Christmas' by Blanche and Oakes Ames (compiled by Botanical Museum of Harvard University, 1975). It is a '... tribute to botanical art and two remarkable human beings ...'

For thirteen years Blanche and Oakes Ames sent unique Christmas greetings to botanical colleagues, and friends. These consisted of an orchid drawing by Blanche, and a quotation chosen by Oakes. Their daughter Pauline Ames Plimton, together with other family members, and '... several of his colleagues at the Botanical Museum ... decided ... to publish reproductions of these Christmas cards.'

As well as the cards and quotations the booklet contains notes on Blanche and Oakes Ames and '... the two institutions so close to their hearts — the American Orchid Society and the Orchid Herbarium

continued p. 27



# A New Hobby: Orchid Society Lapel Pins



In 1980 I took a group of orchid lovers to New Zealand to attend the 1st New Zealand International Orchid Conference held in Auckland, with a tour of the country after the Conference. At the Show venue I noticed a very frantic and fascinating scramble exchanging orchid society lapel pins. ("Down Under" they are referred to as badges.) Found that it apparently was a well organized activity and has been going on for quite some time in Australia and New Zealand. They seemed to be spending a lot of time and energy searching out these lapel pins and trading partners. In fact advance information I have from the 13th World Orchid Conference to be held next year in Auckland, a special area is to be set aside for the trading of pins, stamps and other orchid artifacts. Unfortunately I was unable to take part in this hobby as our local San Diego County Orchid Society did not have a lapel pin at that time. Previously we only had name plates. By 1985 when I led another group to Wellington for the 2nd New Zealand International Orchid Conference, several of us had seen that the lack of pins from the San Diego County Orchid Society had been rectified. So with a fistful of 50 of our pins, I was well 'armed' to take part in the pin swapping mania.

While at the Wellington Show I noticed a young fellow from Invercargill had quite an impressive display of pins. He had a large world map on a display board with his collection of pins mounted around the edge of the map with strings leading from the pins to their town site on the map. Before we left the Conference in Wellington to continue our tour of 'Kiwi' land, I took stock of my booty and

found I had done quite well on my first foray into pin collecting. I had 'captured' 31 New Zealand pins and surprisingly, 8 from Australia.

In October 1986 I launched a letter writing campaign to New Zealand and Australia in pursuit of the many missing badges needed for my collection. Very shortly, I had all that were available from New Zealand, so turned my main effort westward. Then found I had a formidable task ahead of me with over 200 orchid societies in Australia. Undaunted, I plunged ahead posting letters to many of the orchid societies and slowly, but surely, the airmail letter packets started coming in with pins enclosed for a trade for one from our local society. This letter writing campaign gave excellent results as almost all of my letters were answered, even if the society did not have a pin, they usually responded to let me know that they did not have one. One of the pleasant side effects of this letter writing has created some very excellent new friendships. While attending Orchid Expo '88 in Caloundra, Australia last year, I was fortunate enough to meet some of my letter writing-trading partners and was even invited to spend a couple of days in Hervey Bay at the home of Brian and Gloria Pearce. There are now 6 regular trading partners: 4 in Australia, 1 in New Zealand, and 1 in England. Australia is proving to be a real gold mine for these very desirous pins. To date I have collected 144 from just Australia!

Originally I started pinning these badges on a baseball type cap that I happened to be wearing at the New Zealand Conference. Very soon I found out I was running out of space. Then I had a lady create a vest (waistcoat "Down Under") for me and have since then been pinning them on it. The front is now covered and they are now half way across the back. The 12th World Orchid Conference in Tokyo in 1987 saw the debut of my vest. Because of this I met two very avid pin collectors. They are two of the above mentioned trading partners: Harry Wilshaw of England and Jim Dench of New Zealand. Harry has over 300 pins in his collection, while Jim Dench is closely pushing the same figure. At the 12th World

Orchid Conference I was able to add 35 pins to my collection. These came from England, South Africa, Canada and Australia and even 8 from the U.S. There is a real dearth of pins here in the U.S. considering the large number of societies we have up here, though there seems to be a trend to change this. So far I have located 16 of them, mostly from California and Florida.

This is proving to be a very fascinating new hobby for me. (One of the benefits driving from this "orchid collecting" activity, you don't have to worry about a schedule to water and feed them or watch our for crown rot!) The colors and designs make a very interesting display. I have worn my vest to the 12th W.O.C. in Tokyo, Orchid Expo '88 in Caloundra, the 11th Australian Orchid Conference, the 1st Canadian Orchid Congress in Vancouver, the 32nd and 33rd Eastern Orchid Conference here in the U.S. The vest is quite an eye-catcher, besides getting quite weighty, which in the long run does attract attention, which in turn leads to the trading of more pins. With almost 2½ years of diligently seeking out these pins, I have just recently reached the 270 mark.

After the banquet in the Sydney Opera House at the 11th Australian Orchid Conference, five of us avid pin collectors got together (2 from Australia, 2 from New Zealand, and myself) and discussed the possible formation of a Badge Collector's Club. It seemed feasible and needed, so we asked Barry Collins to serve as the General Secretary to launch our new club. He readily agreed to take on the task. Things seem to be slowly but surely getting well underway getting it organized with over 100 inquiries from Australia where all this madness apparently originated. Our first major task is trying to compile a listing of the various pins that are known to have been issued. These lists will be published in a soon to be issued Club News Bulletin as we are able to track the many pins in circulation. For further information collectors can send a stamped self-addressed envelope to Barry Collins, 245 Avoca Street, Randwick, N.S.W. 2031. We look forward to hearing from you.

Ben Hardy 9443 E. Heaney Circle, Santee, Calif. 92071 USA



# TOOWOOMBA ORCHID SPECTACULAR AND CONFERENCE '89



*The Native Orchids are superb at Conference Time in Toowoomba*

The BIG ONE for Queensland in '89, set in the mountains west of Brisbane, 2000ft above sea level.

The response by orchid fanciers, clubs and orchid nurseries, both from Australia and overseas has been very heartening to the Toowoomba Orchid Society organising committee, and they look forward to the great event at the spacious Harristown High School Assembly Hall from September 18 to 24 (open to the public from Wednesday, September 20).

The number of registrants to date has been very encouraging, with many enquiries coming from New Zealand, United States, Japan and most States of Australia.

Nearly all space has been taken for the commercial nurseries, and the 40 display sites for clubs and individual growers is filling steadily.

We are very fortunate that the Spectacular will be held in the very spacious school assembly hall, the

entrance being right on a main road, South Street, with plenty of parking for cars and coaches. In the hall there is ample room for the 40 individual displays, including the Toowoomba Orchid Society's stage display and the Native Orchid Society of Toowoomba's display.

As well, there will be a souvenir booth, flower stall, club plant sales and raffles area. A food and drink outlet will also be available.

We have had a fantastic response from Toowoomba business houses in providing most of the \$7000 prizemoney. A local nationwide transport firm, Simons has provided \$1000 for the Grand Champion Orchid prize, and the Reserve Champion prize of \$500 has been donated by Toowoomba's Mayor and local Member of Parliament, Alderman Clive Berghofer M.L.A.

The social activities planned for the Registrants at the Spectacular

include a welcome cocktail party at the Toowoomba Golf Club's spacious premises situated overlooking the Toowoomba range; a banquet dinner at the same venue, and a good old Aussie barbecue at a beautiful old "pub" – The Farmers Arms – set in peaceful bushland just outside Toowoomba.

A day of interesting lectures has been organised. Both overseas and local speakers will give interesting talks based on the advancement in the culture and growth of orchids.

Speakers are:–

DR. GEOFF STOCKER, Nth Qld. Geoff has travelled extensively throughout New Guinea, Indonesia, Burma, India and Central America. During his travels he has collected superb clones of many species orchids. Geoff has specialised in the Highland Orchids of New Guinea and his lecture will be on these. He will also have for



release at the Conference a selection of Highland species seedlings to flowering size.

DR. ALFRED B. LAU, Mexico. Alfred looks after an orphanage in Mexico and to support the children they make trips throughout Mexico collecting seeds of Palms, Bromeliads, Cacti and Orchids, which they sell throughout the world. His lecture will contain accounts of these trips and the Orchids of Mexico.

RUSSELL HUTTON, New Zealand. Russell and Lorraine Hutton have specialised in the magical Masdevallia Species, and has one of the largest collections of these beautiful orchids. They have available from their nursery an excellent range of Masdevallias and closely allied species. There will be a selection of these available during the Conference.

ANDY EASTON, New Zealand. Andy needs no introduction. Formerly based in the United States, he is one of the world's leading Cymbidium hybridisers and currently owns Geyserland orchids. Andy travels extensively around the world promoting the fellowship and enjoyment of orchid growing. His lecture will cover the advances made in recent years and what the future holds for Cymbidiums.

MARK PENDLETON, U.S.A. Mark and his partners Terry Root and Herb Hager have recently opened The Orchid Zone at Salinas, California. Mark has grown and bred Cymbidiums and Odontoglossums for several years and combined with Terry's knowledge on Paphiopedilums and Herb's widely known Phalaenopsis breeding assured this venture to be a success. Mark's lecture at the conference will look at the Odontoglossums.

DAVID BANKS, Sydney. David is one of Australia's younger hybridisers who will talk on the culture and breeding of the native Sarcochilus.

The Spectacular and Conference, which finishes on Sunday, September 24, will run during the week leading up to Toowoomba's famous attraction – the Carnival of Flowers.

The Carnival celebrations start on Saturday, September 23 with the procession of floats, and goes right through to September 30.

The Toowoomba Orchid Society is undertaking a mammoth task of providing nearly two weeks of orchid shows. When the Spectacular

finishes on Sunday, September 24, the club will assemble a completely new Spring Orchid Show on Monday, September 25 for the rest of Carnival of Flowers Week.

Most of you would have read in the national press of the recent survey undertaken throughout Australia, which came up with the fact that Toowoomba, the Garden City of Queensland, is "The Best Place in Australia to Live" – so why not come and visit us in September.

Bookings for local accommodation during Carnival of Flowers Week is very heavy but there is still accommodation during the week of the Spectacular.

If you would like our latest colour brochure or would like to attend the Toowoomba Orchid Spectacular and Conference '89, please write to: Mr Phillip Mackenzie (Registrar), P.O. Box 885, Toowoomba, Qld. Australia 4350.

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# Safe Simple Methods for Controlling Orchid Pest

W.R. "Bill" Johnson

Glenwood Orchids Pty. Ltd.

Most of the insecticide sprays currently available for PEST control are either too expensive or too dangerous to use, (or both), so for some time I have been seeking a product which will not reduce my lifespan or my bank balance.

I have just concluded some testing which indicates I may have found exactly what I, and no doubt many others, have been wanting for many, many years.

The main pests which are a problem for me are scale, aphids and the two spotted mite — which is also known as red spider and spider mite. The latter is a most difficult pest to control or eradicate.

No doubt other pests annoy other growers which do not affect me, but just possibly they too will respond to the same or similar treatments to those outlined here.

## SPIDER MITE

Two Spotted Mite is a pest which causes untold damage to the horticultural industry and many of the methods advocated for eradicating it, or should I say controlling it, are expensive, and what is more important, are quite capable of harming the user.

Glenwood Orchids began using predator mites around 1976, when we were given a trial sample by the Keith Turnbull Research Station (Vic), and we have had good success with them. However, for some reason they would not establish permanently under certain growing conditions no matter what we tried. However, where predators were permanently established they had spider mite under absolute control.

The reason why the predators would not establish in certain areas was a perplexing question, and no matter how many times fresh stocks were released into areas devoid of predators they just would not remain there.

Over several years I noted that there were two locations where our predator mites could always be found but the reason for this did not become obvious until the recent construction of a large shade house was completed and filled with plants.

This shade area was covered with 65% knitted shade cloth and while it was satisfactory during the winter months it was quite hot on a hot sunny day.

During the summer of 1987-88 a second layer of shade cloth was added to this new shade house which substantially reduced the foliar temperature during summer.

During 1988 it was discovered that the

shade area was totally free of spider mite, and the predators were well and truly established in large numbers.

While working within this shade house during the 1988/89 summer it was noted that the air was cool, even on a hot day, and all areas having similar conditions had permanent colonies of predators.

The growing areas where the predators would NOT establish were always the HOTTEST.

It was suddenly obvious, the two spotted mites thrived in the heat, but the predators avoided it.

The answer then is simple. In order to control two spotted mites by natural means may require nothing more than an adjustment of the environmental conditions so that it favoured the predators.

In ALL areas where the predators were in large numbers the air temperature and shade levels were similar to that provided by a large shady tree. A cool breeze flowing through the shade area, coupled with adequate moist air, maintained a temperature around 28 deg. C. even on a very hot Melbourne day.

There is another factor which is important if one is using predator mites to control two spotted mite which must be taken into consideration.

If the population of two spotted mites is reduced, the predators will roam over a very large area to find sufficient mites to eat. If growers space their pots well apart, or, use short bench runs then this will restrict the predators ability to roam about.

The answer is to grow your pots close together, and use long, continuous benches, or rows where possible, or, alternatively provide some means whereby the predators can gain access from one bench to another. For example, allow the foliage from plants on adjacent benches to touch.

If pots are grown on the ground, place them close together. I am aware that this could cause fresh problems, but they could be overcome by careful selection of the material used as ground cover.

The adult mites are prone to going walkabout, and will soon be found some distance from where they were originally established, but they will have deposited eggs where-ever they have been and while one may see no predators for a while, suddenly juveniles will be seen wandering about.

One good idea is to have one special area set aside as a place where infested plants can be swapped with clean ones to ensure the predators perpetually breed and multiply in that area. Predators in such a "breeding area" can be easily

collected and transferred to other areas.

The predators seem fond of our Native epiphytes such as *Den. Kingianum* and we have a colony of predators established on our natives. I now know that I can always find them there if I need to collect some predators for transferral to other areas.

Incidentally, two spotted, or, spider mites if you prefer that name, are NOT red. Some growers have been killing predators thinking they were spider mites simply because the pest was described as "red spider".

Just shows you how, when we are badly taught, or, poorly informed, we get things horribly wrong and we can actually make things worse for ourselves.

It would therefore appear, once more, that natural means of pest control are available, *providing* we get the conditions right.

Using predator mites successfully is one thing BUT they do not provide quick control over a serious outbreak of two spotted mites, for which spraying is the only solution.

A year or so ago liquid pyrethrum became available and because it had a reputation for being harmless to humans I decided to test its effectiveness on our various pests.

In order to test the pyrethrum on spider mite I firstly ran tests under a microscope to:

- (a) observe if pyrethrum would kill the mites, and
- (b) to find which dilution rate was most effective.

Observing the reaction under the microscope I found mature adults were killed in around ONE MINUTE, juveniles in less.

A more ambitious test was conducted on a large plant which was infested with mites of all ages.

This time I added a "spreader" to the solution because I had observed in the microscope tests that the pyrethrum did not freely form a film over the leaf surface or the mites. I found that when a spreader was added, the pyrethrum rapidly spread over the leaf and the two spotted mites, enhancing the killing factor.

For a spreader I used Clensel at the rate of 10 ml. per litre, and I used 6 ml. of the concentrated pyrethrum solution. I have also used Teepol, and White Oil to be equally effective.



The test plant's foliage was covered with the spray and left.

Next day I inspected the entire foliage and found hundreds of dead mites, and NO live ones.

I inspected the plant again a few days later, and just a few live mites were found. These could easily have been missed on the first spraying or even hatched after spraying.

The plant was sprayed again, and this time on checking no more live mites were found.

A large test spraying was conducted and again with similar results, and, only a few mites were found alive.

NO damage to the plants has been detected, but then only very long term observations will determine if any permanent damage is done to the plant. I am fairly certain that there will be none.

It has been my experience, and others have communicated the same, that some of the more volatile systemic sprays can and do cause deformities to orchids, so if minor damage occurs one is no worse off.

Two or more applications of the spray would be desirable, but then that applies equally to any spraying regime.

Here are a few pointers for those wishing to test my results:—

1. Liquid pyrethrum. If you are buying it check the pyrethrum percentage on the container label.

I found this was a trap because some brands are much cheaper than others and as it turns out they are well and truly diluted. The brand I used contains 13% pyrethrum, but another well known brand on sale in supermarkets contained only 4% pyrethrum — which means one would have to use 3 times as much. A cost comparison showed the brand I used was no more expensive than the other.

2. The mixture. I used 6 ml. of 13% pyrethrum solution in 1 litre of water. To this I added about 10 ml. of a wetting agent (I used Clensel but one could use any pure horticultural wetting agent).

3. Application. Spray the entire leaf area (under and over), paying particular attention to the leaf tips. If the spray does NOT spread over the leaves in a film, insufficient wetting agent was used. Re-spray again one week later to catch any newly hatched mites. A third spray about two weeks later on may also be desirable.

Spider mites are more correctly known as "two spotted mites" with the specific name of *Tetranychus urticae*. They are almost translucent in colour and have large brown spots on each side of the abdomen. One will usually need a magnifying glass to see them on the under side of plant leaves. If the "mites" are clearly visible without a

magnifying glass, and they are brightly coloured they are most likely predators.

Predator mites can be purchased from Biocontrol Ltd. P.O. Box 35 Warwick, Qld. Their address is 124 McEvoy St. Warwick and their phone number is (076) 66-1592.

The predator mite, *Phytoseiulus persimilis*, occurs naturally in Australia, it is not an introduced species, but for some reason it has quite a healthy taste for two spotted mites.

## SCALE

From long term observations, it seems that certain species of scale will specifically attack plants which are unhealthy and weak, and orchids which are grown in enclosed conditions are more prone to attack than orchids grown in an open, natural and healthy environment.

Plants may be given the best fertilizer ever made, BUT, if the plant's root system is damaged little of that fertilizer will get into the plants system, so it is easy to have the mistaken impression that one's orchids are being well fed when in fact they are NOT.

Once again it would seem that the simple cure for scale is to improve the state of health of one's plants by modifications to one's cultural methods. However, to eradicate any spot infections a mixture of white oil and Clensel (used as per directions) will do the trick and it is perfectly harmless.

With a small amount of liquid pyrethrum (circa 3 ml. per litre) added to the solution, the effectiveness of the spray was enhanced.

This method was also 100% effective on Boisduval Scale infesting Cattleyas, but it was most essential that all dried tissue covering the bulbs was removed first, to ensure the spray reached all areas where the scale could hide.

We are now growing more and more orchids under shade cloth alone. A single layer of 65% is permanently in place for winter months, with a second layer of 50% to 70% added from early September to April. Despite dire predictions by some, the REDUCTION of light has INCREASED both growth rates and flower spike production.

Plants grown in such shade cloth areas are NOT attacked by scale or two spotted mites.

I have NOT tested this system on Lycastes which are usually sensitive to white oil spraying, so I would suggest that tests be made on an unwanted plant first before any attempt is made to spray this formula onto Lycastes. I would also suggest that any tests be made with and without the spreader.

## APHIDS

I have not yet found a controllable

natural way to eradicate aphids, although I am well aware that ladybird larvae feed on aphids, having spent a lot of my "youth" working with a fellow natural history photographer friend who made an excellent 16mm movie film illustrating how effective the ladybird larvae were in eating their way through large numbers of aphids.

This film was titled "The Life Cycle of a Ladybird" and the photographer was the late W. G. "Gil" Nicholls. I know that certain of Gil's films were available through the (Vic.) State Film Library. If it should be then it is worthwhile viewing because it clearly illustrates biological control at it's best. The film was made circa 1950.

The trouble is, since 1950 we became enamored with pesticides and we have probably killed off the greater part of the ladybird population with them.

Nowadays when the aphid season is on one rarely sees a ladybird anywhere.

So, with insecticides the remaining option and with the success against the mites under my belt, I tested the pyrethrum spray on some Aphids, AND it was AGAIN 100% successful, once more with no apparent side effects (to me or the plants).

If you too can't collect ladybirds, then try pyrethrum, but if sprayed on flowers, try it without the spreader.

Perhaps someone will get the message one day and breed ladybirds by the millions just as they are predator mites.

## MEALY BUG

A large scale eradication test was conducted on mealy bug infesting paphiopedilums using the liquid pyrethrum in conjunction with a spreader, and once again a near 100% killing rate was achieved.

The spreader was essential to remove the white "woolly" covering and allow the pesticide to penetrate.

In our tests we thoroughly sprayed the entire plant, including the leaf junctions. Once it was certain the whole plant was covered the plants were inverted to allow any excess solution to be drained from the plant.

This draining procedure would be most important, particularly for paphiopedilums.

The outer surface of the pots were also saturated, particularly any pot which had a broad rim because mealy bug was found to be sheltering on the pot's external surface.

I would suggest caution using this spraying process on paphiopedilums, particularly in cold, damp winter conditions, because the wetting agent could collect in the leaf junctions and cause some damage. If applied on the under-

continued p. 27



# WHAT'S IN A NAME

By Brian Maxwell

Shakespeare wrote, "that which we call a rose by any other name would smell as sweet." Not so with orchids!!!

The orchid is the only member of the plant family for which a complete record has been kept of all the crosses registered. ALL orchid growers, therefore, have a responsibility to ensure that what is written on that little tag we place in a pot is **CORRECT**.

The Rules for the correct setting out of names are to be found in the International Orchid Commission's publication "Handbook on Orchid Nomenclature and Registration". Don't let the title put you off. I'm sure there will be at least one copy in the library of every Orchid Society.

## THE HARDWARE

What makes a good orchid label? For me the label must have two qualities. The writing surface must be large enough to cope with even the longest name and the plastic must be thick and durable enough to last for many years.

Many of the printed labels used by orchid nurseries are too thin and tend to snap easily after only a year or so. Because we all like to remember where we purchased a particular plant, I write a label of my own to place in the pot as well. If you place this label in front of the nursery label, you can see from one side of the bench where you purchased the plant and from the other side the name of the plant. To write this extra label does not take all that long and it ensures that you don't finish up with a bench of plants labelled *Cattleya* "unknown".

Of equal importance to the quality of the label is the quality of the writing instrument. I look for something that is fine enough for fairly small printing yet permanent enough to last for the life of the label. I have not yet found any type of pen with durable enough ink.

My choice of a writing instrument is a pencil. Not all pencils will do. They must be soft enough to write clearly on a shiny plastic surface yet hard enough to retain a point for quite a number of labels. After a number of years of experimenting, I have settled on the Stabilo 8008.

These are not obtainable at most newsagents but any Office Supplies distributor should have them or be able to get them for you.

## WHAT TO DO WITH THE HARDWARE

Now that we have the correct utensils, it would be a shame to use them incorrectly.

Labels should be printed but you **MUST** follow the rules.

**SPECIES:** For the name of the particular species use all lower case (small) letters except for the family name, e.g.

e.g. *C. intermedia* or *Diacm. bicornutum*

**NOT** *C. Intermedia* or *Diacm. Bicornutum*

The correct abbreviations to use can be found either in the "Handbook on Orchid Nomenclature and Registration" or in the front section of "Sander's List of Orchid Hybrids". Be sure to use the correct abbreviations.

Within the *Cattleya intermedia* species, there are a number of distinct varieties where all the members are a similar colour or pattern. The names of these are correctly written as follows —

*C. intermedia* var. *alba*; *C. intermedia* var. *aquinii*; etc.

Now within the *Cattleya intermedia* var. *aquinii* group of plants there may be several outstanding examples to which we wish to be able to refer individually, e.g. *C. intermedia* var. *aquinii* 'Kokusai' or *C. intermedia* var. *aquinii* 'Splash'.

**NATURAL HYBRIDS:** Growers should also be aware that natural hybrids can occur in both interspecific and intergeneric forms, e.g.

Interspecific: *Cymbidium* x *ballianum*

Intergeneric: *xLaeliocattleya* *leeanae* = (*C. loddigesii* x *L. pumila*)

A study of these will reveal that at least as far as the writing of labels goes, they are treated as for the species with the addition of the multiplication sign ×. Specific clones are still indicated in the same way as for species, e.g. *Cym. xballianum* 'Ajax'.

**ARTIFICIAL HYBRIDS:** The names of artificial hybrids are written in the following way. *C. Bow Bells* 'Perfection'. Please note the use of the capital letters which is our means of indicating that this is neither a species nor an interspecific natural hybrid. It could not of course, for obvious reasons, be an intergeneric natural hybrid.

The lettering on the label can thus tell us a great deal about the plant in question, provided the writer of the label has done the job correctly. One other lazy habit which label writers have gotten into is to leave out the abbreviated form of *Memoria* (Mem.) when writing the names of such orchids as —

*Blc. Mem. Crispin Rosales* 'Ruen Yuen' or *Lc. Mem. Albert Heinecke*.

New comers then find difficulty in locating these names in alphabetical listings

such as "Sander's List of Orchid Hybrids".

There are unfortunately those people who breed orchid hybrids but never get round to registering the progeny. Who among us has a collection without at least a handful of labels with three, four or even five or more names linked by nothing more than multiplication signs? Worse still there are still those who do not recognize the importance of writing these labels correctly.

To illustrate, let us take a relatively simple label written (incorrectly) as —

*Slc. Jewel Box* × *Sc. Doris* × *Sc. Beaufort*

We now explore the possibilities by writing this in as many correct ways as possible. If we assume that the names have at least been retained in the correct order, there are two possibilities —  
(i) (*Slc. Jewel Box* × *Sc. Doris*) × *Sc. Beaufort*

(ii) *Slc. Jewel Box* × (*Sc. Doris* × *Sc. Beaufort*)

What difference does that make? Let's follow it through —

(i) (*Slc. Jewel Box* × *Sc. Doris*) × *Sc. Beaufort*

= *Slc. Madge Fordyce* × *Sc. Beaufort*

= *Slc. Mango Tart*

(ii) *Slc. Jewel Box* × (*Sc. Doris* × *Sc. Beaufort*)

= *Slc. Jewel Box* × *Sc. Scarlet Angel*

= *Slc. ??????????*

The final cross here has not been registered to date but it certainly could NEVER be registered as *Slc. Mango Tart*!!!

We can thus see that the end result of the two possibilities are two different orchids. What confusion there could be in future registrations of hybrids if labels are not written correctly. We were able to sort out the confusion in the above example by the simple expedient of using brackets. Two unfortunate bad habits are creeping into label writing and should be stopped immediately. To take the example from above — *Slc. Jewel Box* × *Sc. Doris* × *Sc. Beaufort* has been written as —

*Slc. Jewel Box* — *Sc. Doris* × *Sc. Beaufort* OR

*Slc. Jewel Box* × *Sc. Doris* × × *Sc. Beaufort* to indicate what should have been written as (*Slc. Jewel Box* × *Slc. Doris*) × *Sc. Beaufort*.

Please stamp out this habit before it gains a foothold.

The difficulties of our simple example of three components in a cross becomes much more complicated where there are four names to cope with — to save space I will represent it diagrammatically —



A × B × C × D  
 could be (A × B) × (C × D) = Orchid  
 U  
 or [A × (B × C)] × D = Orchid  
 V  
 or [(A × B) × C] × D = Orchid  
 W  
 or A × [(B × C) × D] = Orchid  
 Y  
 or A × [B × (C × D)] = Orchid  
 Z

and these are the results if the names have always been written in the correct order. If someone along the line had changed the order in which the names were written then the possible end products are greatly increased. You must realize that the orchids designated above by the letters U, V, W, Y and Z are five different orchids and could never be written under the one name. They are the results of five different sequences of breeding. I will follow them through to illustrate the point —

(A × B) × (C × D)  
 = E × F  
 = U

[(A × B) × C] × D  
 = [E × C] × D  
 = I × D  
 = W

A × [B × (C × D)]  
 = A × [B × F]  
 = A × K  
 = Z

[A × (B × C)] × D  
 = [A × G] × D  
 = H × D  
 = V

A × [(B × C) × D]  
 = A × [G × D]  
 = A × J  
 = Y

You will notice here that I have introduced a new type of brackets [ ] to assist us in understanding the more complex crosses that have been made. In using brackets we would start with ( ) to indicate the first cross made then [ ] to indicate that something has been crossed with what was inside ( ) and then if necessary use { } to indicate the next cross.

How much simpler our lives would be if those who wish to use an unregistered cross in breeding would see to its registration. After all, if the flower is good enough to use to breed with, then surely it should be registered.

If you have orchids in your collection which have no indication of the order of the various crosses, please don't use them for breeding. Let's retain the integrity of the Sander's Lists. •



## Phuket and Phang-Nga Bay Tour

Prof Rapee Sagarik organised our tour, and what a wonderful time we had.

Ten of us took the one hour flight from Bangkok to Phuket. We arrived at the Pearl Hotel, a lovely old hotel in the centre of town (just like our Hotel Darwin) with a garden setting with pool and orchids.

We were soon off to visit the Phuket Gardens, and were welcomed with fresh drinks, then off to see the orchid project which Prof. Rapee Sagarik is helping to establish. This delightful garden setting has a cultural show daily, and displays from many of the local industries, all beautifully presented and a great tourist attraction. After the show we had dinner with Professor Sagarik in the gardens restaurant. The weather was perfect.

The next day we went to Phang-Nga Bay, about an hours journey by bus. On the way we saw *Arundina graminifolia* growing in long grass by the roadside and amongst them were pitcher plants. We went past rubber plantations and coconut farms also pineapples and saw many varieties of fruit.

We arrived at Phang-Nga Bay, which is one of the great scenic attractions of the world. The limestone peaks of mountains rise out of the sea. Many thousand years ago this mountainous area was covered with glaciers, which melted. The sea rose, leaving only the peaks out of the water. It was a fantastic sight. We boarded a boat and went for a tour around the Bay. We passed a fishing village at the base of one of the peaks, built in the water on stilts, including a school and mosque.

We arrived at a small island with a sandy beach. After a picnic lunch, our guide found some *Paphiopedilum godefroyae*. These mottled leaf Paphs. were tucked away in rock crevices in moist sand in quite a lot of shade. Prof Rapee Sagarik was off, climbing up the steep rocks to explore and photograph. In fact it was hard work to keep up with him! Soon we had seen many more *Paphiopedilums*, all tucked away in cool crevices. Then we saw from the rocks, *Aerides odorata*, *Trichoglottis faciata* and *Vanda teres*, just hanging from the rocks, what a thrill to see them in their natural habitat! There were many species of

*Dendrobium* on the trees, but were not in flower, and so were hard to identify.

On the way back we passed through a tunnel of limestone cliffs with many bats flying around us. We saw many more orchids hanging from the cliff face, also *Paph. exul*, a plain leaf species on the face of the rock in a much more exposed position.

It was a wonderful day, and Prof Rapee Sagarik seemed to enjoy it as much as we did, recording it all on video camera. That night back in Phuket, we went to a superb fish restaurant on the seafront with the Professor, his friend and Wora Dawson, one of his old students.

So back to busy Bangkok, and next day to Chiang Mai, more news about that next time.

Rosemary Bromwich

People on Phuket tour;

Prof Rapee Sagarik	
Gus Klose	Haleema Dauth
Alastair McGregor	Angie Aralar
Peter Crook	Marsha Aralar
Wendy Crook	Jenny Cuff
Rosemary Bromwich	

### OBITUARY

It is with sadness that we learnt of the death of Ralph Handcock.

He was a remarkable person in that after a life-time of growing cymbidium orchids in Sydney, he came to Darwin to take up the challenge of growing tropical orchids here.

He was a foundation member of our Society, and he brought to it all his knowledge of how to run an Orchid Society. He helped put up our first orchid display, ran our first trading table, and started our first judging classes.

One will always remember that at over eighty years of age he began a ten year plan for his orchids. What an inspiration for us all!

At ninety four years, he was still caring for his orchids, and still coming to our meetings.

We would like to extend our sympathy to his family, and especially to his son Merv, who has done so much to support his Father, and to help our Society.



# Native Epiphytes in Southern Victoria

If nature had intended that Australian epiphytic/lithophytic orchids were to grow in Southern Victoria, either the species would have the genetic make up to suit the environment or the environment would have been changed to suit the species. Since neither event has occurred naturally, man must — to grow these plants with any degree of success — at least provide the basic requirements as we would for any exotic orchid species, or, for that matter, any other plant. The fallacy “that since it is native it should grow here” could not be further from the truth without considerable effort to make it happen.

The majority of our epiphytic/lithophytic orchids inhabit the coastal strip between the mountains and the sea from Eastern Victoria, up the eastern coast to Cape York Peninsula. Even in this relatively small area in a country as vast as Australia, there exists a range of climatic conditions from snow and frost areas to the constant temperatures of the true tropics, from open grasslands through various degrees of forestation to the jungle like tropical rain forests of the north. The effect of these changing conditions is reflected in the range of varieties within a given species. The basic conditions required by a species or variety should be considered before we attempt to grow these plants in our vastly different environment.

Probably the one requirement that is common to all our orchids is their need for moving, fresh air. Plants grown in confined space without ventilation are very prone to fungus and disease attack. In nature, an orchid growing on a host tree is protected from strong winds by the canopy of the host and other trees around it, but even the most gentle breeze produces continuous air movement. In cultivation air movement is essential to maintain the health of the plants.

Draughts must be avoided. A plant in a constant or frequent draught will not flourish but will stagnate or deteriorate.

Temperature is of prime consideration and must be thought of in terms of both minimum and maximum requirements. Constant spells beyond either limit can be very detrimental to the health of the plant. All should be considered frost tender and although many species can be quite successfully grown without heat, they must be protected from frost. Many plants from our more northern areas grow in the mountains at higher altitudes which are significantly cooler than the adjacent, coastal lowlands.

Temperature is to be thought of in conjunction with air movement and humidity,

both of which may be used to modify extreme temperatures.

The coastal strip has the very decided advantage of receiving the majority of its abundant rainfall during the warmer months of the year and having a winter that is relatively mild and dry. This is a situation that is essential in the plant growth cycle. Plants that are allowed to dry out in our high summer temperatures will become distressed very quickly, particularly on days of hot, dry winds; and, conversely, plants that are overwet on cold winter days and frosty nights will also fare very poorly.

While mounted plants will benefit from heavy watering during summer, more care must be taken with potted plants and potting media needs to provide excellent drainage. Roots that are kept overwet will deteriorate quickly. It is more beneficial to leave the pots on the dryer side and increase the humidity by wetting down the surrounding area. Mounted plants rarely have problems with drainage.

Light intensity plays a very important part in the growth and flowering cycle of the plant. Light requirement or tolerance varies dramatically from species to species and again in Southern Victoria we must compensate for the variations from the natural habitat. The days of our hot, dry summer are longer and less clouded and so are brighter, while our winter days are significantly shorter and much more cloudy. Therefore, while some shading is necessary for most species in summer, many will require the maximum light possible during winter.

The nutritional requirements are minimal. Plants in nature rely totally on the decaying, vegetative or organic matter that is washed into their root system by nature. In cultivation a frequent application of very, weak organic fertilizer is ample. Chemical fertilizers have a tendency to burn root systems, and to build up in porous potting materials to turn them sour which is detrimental to the plants.

Growth and flowering cycles are extremely varied and many have very specific seasonal requirements including a totally dry rest period. Others require to be well watered the year around. It is necessary to study each species and, as far as possible, to match its natural environment to produce the best from each plant. So, again, just because it's native does not mean it will grow without some help from you. ●

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of Oakes Ames.'

Starting in his childhood, Oakes Ames' interest in plants, wild-flowers and orchids has been documented in various biographical sketches.

The booklet tells of how in 1889 when only fifteen, Oakes Ames had commenced the preparation of an orchid herbarium. As well as samples of native orchids, he had prepared pressings of single blooms of exotic orchids, 'collected from the greenhouses of his father and his father's cousin . . .'

From the time of their marriage in 1900 Blanche and Oakes Ames operated as a team: '... she became the artist of the family almost at once,' making '... virtually all the illustrations for his botanical books.'

For a small 50 page publication 'Orchids at Christmas' holds a wealth of interest. In the re-reading for the preparation of this article it has inspired me to seek out a biography of this man and his accomplishments in and for the world of orchids.

Lastly I'd like to mention 'The Orchid Hunters' by Norman MacDonald (Farrar & Reinhart Inc. — Printed by Quinn & Boden Com-

pany, Inc. New Jersey, U.S.A. — 1933).

This is the tale of two young men who pursued orchids in an entirely different way to that of Oakes Ames. They renounced 'the office desk and the pay envelopes, decided to hunt orchids!'

They chose Venezuela and Columbia as the 'sources of the best commercial types of orchids — *Cattleya mossiae*,  *trianaei* and *schroederiae*'.

We abhor the wholesale slaughter and destruction that must have gone on in the early days of orchid collecting, but here is a book published in 1939: when orders were achieved (in 1937) for 5000 plants of *Cattleya trianaei*, 4000 plants of *C. schroederiae* and 1000 of *C. mossiae*! Really, we haven't progressed far when one takes time to reflect on the present situation. Now it's not only the plants being removed, but their entire habitat being decimated. I wonder just what kind of a world we are leaving for our children.

However, be that as it may, 'The Orchid Hunters' provides a picture of just what befell collectors in general, and these two young men in particular, in their chosen em-

ployment other than an office.

Provided one leaves aside the emotive issue of conservation and preservation this book can be enjoyed. The reader participates in climbing a jungle giant, knows the agony of encountering stinging ants, the revulsion of a face-to-face confrontation with a poisonous snake, and the hazard of maybe meeting up with a hungry jaguar.

The cold, dampness, mists of the rainy season; fevers, colds, and the risk of malaria — one sits in a comfortable armchair and experiences all this without any of the risks!

I hope readers have enjoyed my comments on the above books, and perhaps may even become inspired to seek out copies. Diligent searching in second-hand bookshops could bring to light some or all of the books mentioned. Or they may remain like the must-sought-after black orchid, very elusive!



continued from p. 21

side of the foliage I doubt any damage will be caused.

Follow up inspections after our test spraying indicated a kill rate near 100%.

When using other systemic sprays on paphiopedilums I found that too many plants produced deformities to either the foliage, the flowers, or both. So far no deformities to the plant has been observed but it is too soon to say that will not occur.

If some deformities do occur, we are still no worse off.

## OTHER PESTS

My tests suggest that if the pest is an insect, then pyrethrum is worth a try.

I have no means of confirming what residual effect this substance may have, if any, but it is suggested that there is none.

So, maybe at long last I have that SAFE, NON-TOXIC NON-RESIDUAL pesticide I (and no doubt others) have been seeking for many years.

For those who wish to perform their own tests, the brand of liquid pyrethrum I tested was Kendon. The percentage of pyrethrum present in this product was 13%.

The brand containing 4% of pyrethrum was Hortico. I would presume either

continued p. 29

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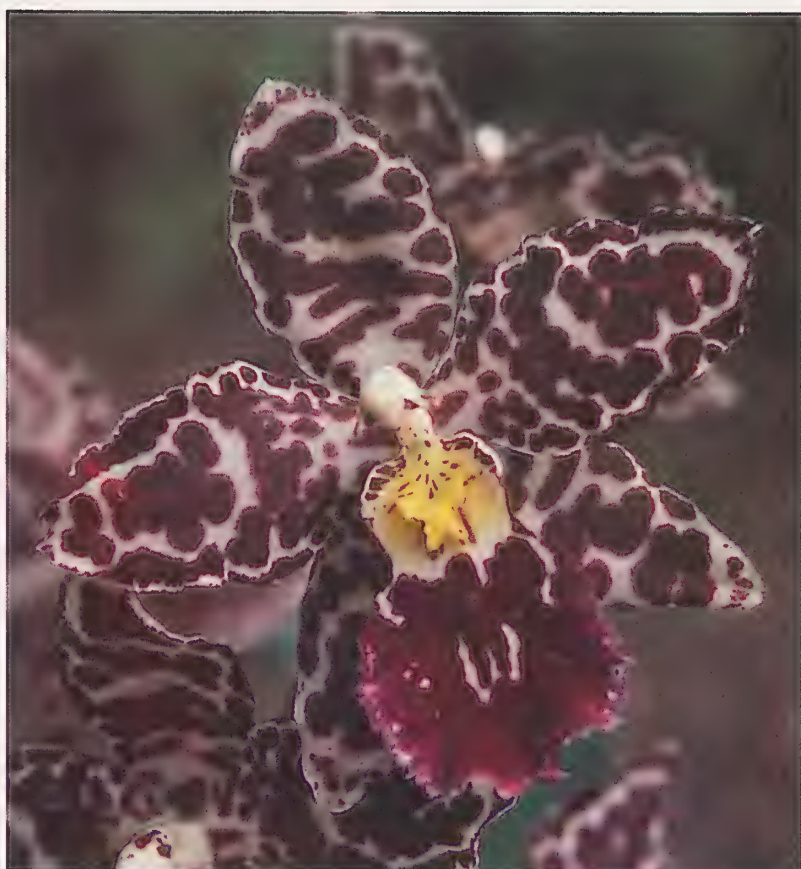
*Otcm* Tiger Hambühren) in bloom. *Odtcm*. Tiger Hambühren is a pretty yellow somewhat lacking in substance with a good display of flowers on a branching spike. But crossing it with *Odm. bictoniense* a transformation occurs. The flowers improve in shape, substance improves with a resultant added depth of colour both in the yellow and the brown barrings. We look forward to seeing a remake of this cross using the yellow *Odm. bictoniense* var. *Sulphureum*.

In 1975 a significant hybrid for the commercial orchid world was registered by Arthur Elle: *Odm. Anneliese* Rothenberger (x *Odm. Goldrausch*). The variety "Foricultura" in particular became a top seller in Europe with tens of thousands being cultivated for the potplant market. It would probably have remained a top seller but for a back crossing to *Odm. Goldrausch* that produced *Odm. Burghard Holm*, the flowers of which are similar to *Anneliese Rothenberger* but fuller, brighter in colour and somewhat larger. This has now largely captured the market its predecessor once filled. So remember the next time you see it on the show bench, this is straight *Odontoglossum* breeding and not, as I often see it, judged in "Any Other Genera" as an *Odontocidium*.

To bring things more up to date we will look at a lovely hybrid called *Oda. Marguerite Holm*. This was bred from the primary hybrid *Odm. Bicross* (x *Odm. rossii*). *Odm. Bicross* was only registered in 1979 and as far as I know has been little used till now.

The photograph shows *Odontioda Marguerite Holm* "Lyoth Alliance" (*Odm. Bicross* x *Oda. Adolf Rohi*), the bright colours and perky charm are obvious. When exhibited in London at the *Odontoglossum Alliance Meeting* it won Best Novelty Hybrid against stiff competition.

Another variety *Oda. Marguerite Holm* "Bon Bon" received an AM/RHS in 1987. The fact that this type of breeding is being recognised by the judges is giving further impetus for hybridizers to explore the exciting possibilities offered by *Odm. bictoniense*. With the vividness of colour, dark lips and a different look about these flowers, it is not hard to see why they have become much sought after by growers in the U-K and U.S.A. To this you can also add the advan-



IV. *Oda Marguerite Holm* "Lyoth Alliance" Champion Novelty Odont.

tage of a certain primary hybrid vigour associated with less complex hybrids.

For Australian growers troubled with summers too warm for the more traditional *Odontoglossum*-*Odontioda* types, *Odm. bictoniense* appears to impart some tolerance in this respect particularly when bred to *Oncidiums*.

From *Odm. bictoniense* you can expect much more yet. Already we have seen very dark colours, so perhaps vini-colour *Odontoglossums* will emerge and become as popular as vini-colour *Paphiopedilums*.

In the other direction the yellow and green albino forms when used in conjunction with pure colour *Odm.* hybrids must also offer exciting possibilities.

Clive Halls  
Mt. Beenak Orchids  
R.S.D. 92 Three Bridges 3797, Vic.

Photo Credits:  
*Odm. bictoniense*: G. McGraith  
*Odtcm. Bittersweet* "Cherry Chip": Milton Carpenter  
*Oda. Marguerite Holm* "Lyoth Alliance": C. Halls  
*Odm. Burghard Holm*: C. Halls





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continued from p. 27

would be just as effective so long as the correct amount of each liquid was added to water.

To find the equivalent of 6 ml. of 13% solution is easy.

If the 4% solution is used then just divide 13 by 4 and multiply the answer by 6. E.g.  $13 \div 4 = 3.25$ .  $3.25 \times 6 = 19.5$ . So the equivalent amount of 4% solution needed is 19.5 ml. per litre of water.

To convert other dilution rates simply replace the figure 4 in the above example with the new specified percentage of pyrethrum in the solution.

I would be interested to receive the results of similar tests made by others, and I would be most interested if any one can confirm our observations on the effect of temperature on the movement of predator mite populations.

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# SHOW DATES

## VICTORIA

### Australasian Native Orchid Society

SPRING: Saturday 30th September 11 am-6 pm and Sunday 1st October 9 am-4 pm. National Herbarium, Birdwood Avenue, South Yarra. Melway Map 58, A.1.

### Geelong Orchid & Indoor Plant Club Inc.

WINTER: 3rd & 4th June, Saturday 3rd 1 pm-5 pm, Sunday 4th 10 am-5 pm. St John's Hall, Myers Street, Geelong.

SPRING: 30th September & 1st October, Saturday 1 pm-9 pm, Sunday 10 am-5 pm. Centenary Hall Cox Road, Norlane.

### Melbourne Eastern Orchid Society Inc.

SPRING: World of Orchids. 5th-8th October, Thursday, Friday, Saturday 9 am-9 pm, Sunday 10 am-5 pm. Mechanics Institute, Oakleigh.

### Mornington Peninsular Orchid Society Inc.

WINTER: Mornington Peninsular Cranbourne Park Show, Monday 7th to Saturday 12th August. Normal Shopping Centre Hours. Cranbourne Park Shopping Centre, High Street, Cranbourne.

SPRING: Mornington Peninsular Orchid Society Inc. Show, Saturday 7th to Sunday 8th October. Saturday 9 am-6 pm and Sunday 10 am-5 pm. Frankston High School Assembly Hall, Tower Hill Road, Frankston.

## NSW & ACT

### Berowra Orchid Society

SPRING: Friday 15th September 12 noon-9 pm, Saturday 16th September 9 am-9 pm. Berowra Community Centre, Gully Road, Berowra NSW.

### Blue Mountains & District Orchid Society

WINTER: 1st June 9 am-9 pm, 2nd June 9 am-7.30 pm, 3rd June 9 am-4.00 pm. Penrith Plaza Shopping Centre.

SPRING: 9th September 12 noon-5 pm, 10th September 9 am-4 pm. The Melrose Hall, Emu Plains.

### Byron District Orchid Society Inc.

SPRING: 15th-16th September 9 am-5 pm. Mullumbimby United Church Hall.

### Casino and District Orchid Society Inc.

SPRING: 22nd September 9 am-6 pm, 23rd September 9 am-4.30 pm. R.S.L. Hall, Canterbury Street, Casino 2470. Featuring THE CHAMPION ORCHID OF SUMMERLAND also Bromeliad Display. R.S.L. Hall, Canterbury Street, Casino.

### City of Lismore Orchid Society Inc.

SPRING: 7th September 9 am-7.30 pm, 8th September 9 am-6 pm, 9th September 9 am-7 pm, 10th September 9 am-3 pm. City Of

Lismore Orchid Society Inc., Ballina Street, Lismore.

### Cumberland Orchid Circle

WINTER: 29th June 9 am-9 pm, 30th June 9 am-5 pm, 1st July 9 am-4 pm. Castle Towers Shopping Centre.

SPRING: 30th August 9 am-5 pm, 31st August 9 am-9 pm, 1st September 9 am-5 pm, 2nd September 9 am-4 pm. Castle Towers Shopping Centre.

### Great Lakes Orchid Society

WINTER: 8th-10th June 9 am-5 pm. Kmart Shopping Village.

SPRING: 30th September & 1st October 9 am-5 pm. Forster Primary School, Middle Street.

### Illawarra District Orchid Society

WINTER: 13th July 9 am-9 pm, 14th July 9 am-5 pm, 15th July 9 am-12 noon. Westfield Shopping Complex, Warrawong.

SPRING: 31st August 9 am-9 pm, 1st September 9 am-5 pm, 2nd September 9 am-12 noon.

AUTUMN: 1st June 9 am-9 pm, 2nd June 9 am-5 pm, 3rd June 9 am-12 noon.

### Mullumbimby Orchid Society

SPRING: Byron District Orchid Society Inc. 15 & 16th September. 9 am-5 pm. Mullumbimby United Church Hall.

### Nambucca Valley Orchid Society

SPRING: 8th September 9 am-8 pm, 9th September 9 am-4 pm. Nambucca Entertainment Centre, Ridge St, Nambucca Heads.

### North Shore Orchid Society

SPRING: 28th-30th August 9 am-5 pm, 31st August 9 am-9 pm, 1st September 9 am-6 pm, 2nd September 9 am-4 pm. Lemon Grove Shopping Centre, Victoria Avenue, Chatswood.

### Northern Rivers Orchid Species Society

SPRING: 26th & 27th September 9 am-9 pm, 28th September 9 am-12 noon. Species show ONLY. Lismore Shopping Square.

### Orchid Society of Canberra

SPRING: 9th September 12 noon-5 pm, 10th September 9 am-4 pm. Phillip College, Launceston Street, Phillip, ACT.

### Panania-East Hills (R.S.L.) Orchid Society

SPRING: 9th September 10.30 am-4.30 pm. Panania Senior Citizen's Centre, Cnr Anderson Avenue & Pepper Street, Panania.

### Southern Riverina Orchid Society

SPRING: Spring Show 8 am to 5 pm, 9 am to 5 pm

### Maroochydore Orchid Society

SPRING: 3rd, 4th, 5th August. 8.30 am-5 pm, 3rd & 4th; 8.30 am-3 pm 5th. Maroochydore (Butts) Shopping Centre, Duporth Avenue, Maroochydore.

### Tropical Queensland Orchid Council

Meetings held in Townsville in March and November Conference held in June (Queen's Birthday Weekend) Host Society 1989 - TULLY.

### Wynnum Manly District Orchid Society Inc.

Saturday, 29th September and Sunday 1st October. R.S.L. Hall, Melville Terrace, Manly, Qld.

## WESTERN AUSTRALIA

### Albany Orchid Society

WINTER: 27th-29th July (venue not known).

SPRING: 21st-23rd September (venue not known).

### Augusta and Districts Orchid Society

SPRING: 15th-16th September. CWA Hall, Augusta.

### Bunbury Orchid Society

WINTER: 26th-29th July. Bunbury Forum Shopping Centre, Bunbury.

SPRING: 27th-30th September (venue to be advised).

### Esperance Orchid Society

SPRING: 6th September (venue not known).

### Geraldton Orchid Society

No shows planned 1989.

### Melville Districts Orchid Society

WINTER: 15th-16th July. Roy Edinger Hall, Melville.

SPRING: 2nd-3rd September. Roy Edinger Hall, Melville.

### Mandurah Orchid Club

SPRING: 16th-17th September. Aquatic Centre, Mandurah.

DISPLAY ONLY: 2nd-5th August. Kmart Shopping Centre, Mandurah.

### Northern Districts Orchid Society

WINTER: 27th-29th July. Belmont Shopping Centre, Belmont.

SPRING: (To be advised).

AUTUMN DISPLAY: 18th-20th May. Dianella Shopping Centre, Dianella.

### Orchid Society of Western Australia

WINTER: 29th-30th July. Collins St. Hall, South Perth.

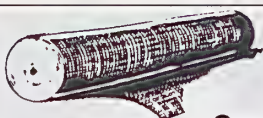
SPRING: 13th-16th September. Metro Maddington Shopping Centre, Maddington.

### South Eastern Orchid Society of W.A.

SPRING: 26th-27th August. Kelmscott Agri-

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WINTER: 6th-8th July. Whitford Shopping  
Centre, Whitfords.  
SPRING: 7th-9th September. Whitfords Shop-  
ping Centre, Whitfords.  
DISPLAY ONLY: 24th-25th June. Lesser Hall,  
Wanneroo Shire Offices, Wanneroo.

## TASMANIA

**Launceston Orchid Society Inc.**

SPRING: 6th October 2 pm-9 pm, 7th October  
9.30 am-9 pm, 8th October 9.30 am-6 pm.  
1989 spring show coincides with our 11th  
Tasmanian Conference. The Launceston Or-  
chid Society are hostesses.

**Litchfield Orchid Club.**

AUTUMN: Freds Pass Show. 20th & 21st  
May 89, 9am-6pm.

SPRING: Palmerston Orchid Display, Date to  
be set possibly Oct '89.



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**CAIRNS** Limberlost Nursery, Old Smithfield Road, Freshwater, Cairns. Ph (070) 55 1262.  
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# SARCOCHILUS CECILIAE



Why is it that *Sarcochilus ceciliae* always flowers at its best in the Parramatta area in December, no meetings, only Christmas Parties?

Many years ago, (must be about 30) while on a visit with Lorrie Friar of Grafton, we were taken to Glenugie Peak, now called Mt. Elaine, to have a look at a number of natives growing there. Mt. Elaine is situated about 15 km south of Grafton, and is quite a land-mark as it rises rather steeply from a flat wooded area.

Using a Landrover, Lorrie took us up a

very rough and steep track as far as he could safely negotiate and we then set off on foot to climb to the peak. Mt. Elaine consists of a black granite type of rock which seemed to be harder than blue metal, and the going was very tough.

We found and inspected quite a number of different species, but what amazed us was the amount of *S. ceciliae* growing in clefts in the rock-face facing west. The temperature on those rocks must be well above 40° during the summer. Three small plants were carefully removed, packed and brought back to Parramatta.

As the plants grew they were repotted into a slightly larger container. They have grown well under our conditions, and at present it is in a 30cm. shallow pan. Last year after the flower spikes had died off, (unfortunately it did not have any keiki) we counted 130. This year it carried 293 flower spikes.

Unfortunately by the time our January meeting comes around it will have lost quite a lot of flowers, but this year we notice there is quite a number of late spikes which we hope will hold.

E.R. Pauley





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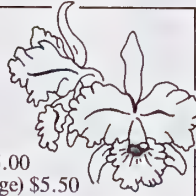
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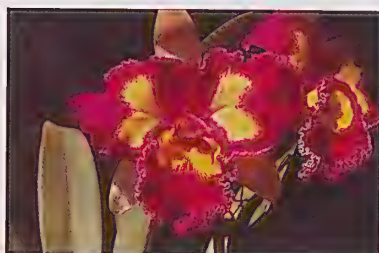
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Review

Volume 54 – No. 4

AUGUST, 1989





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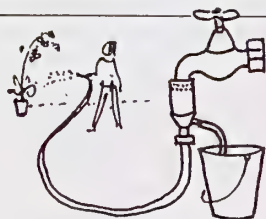
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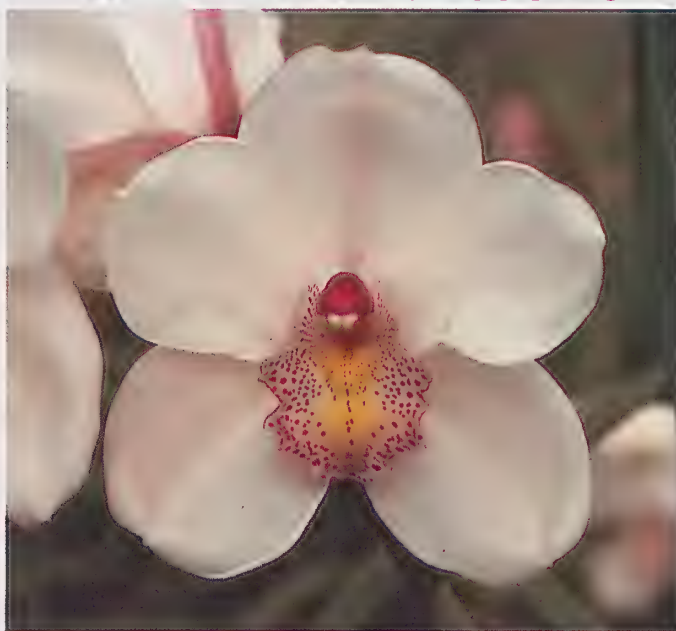
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# Odontoglossum cirrhosum

**F**or the third of our series on Odontoglossum species behind the hybrids we look at *Odm. cirrhosum*, a rather rare and lovely species from Ecuador. (Plate 1).

Not a large number of hybrids have been made from *Odm. cirrhosum* compared with *Odm. crispum* or *Odm. harryanum* for instance. Looking back through the registrations shows only 38 crosses made with *Odm. cirrhosum* up to 1947, the golden age of Odontoglossum hybridizing, compared with a staggering 268 for *Odm. crispum* in the same period. From 1947 to 1962 no crosses were registered with *O. cirrhosum* and even *Odm. crispum* fell to a mere 68 registrations. As far as I can determine no more registrations have been recorded using *O.*

*cirrhosum* to the present time.

But because they haven't been registered we must not think no work is been done. The cost of registrations with the R.H.S. is now over \$25.00 each, which probably prevents a lot of hybridizers registering their new crosses unless they have some significance, that is an award, or when used for on breeding which require future registration. However I think it is fair to say that because *O. cirrhosum* is such a rare species, combined with the fact that our judging systems actively encourage the pursuit of the round flower as being the ultimate in development, that the use of this parent is probably neglected.

But though not used as a primary parent, as a grandparent we see some

evidence of its genes. That innovative hybridizer Keith Andrew picked an old hybrid registered by Charlesworth in 1906 called *Odontioda Heatonensis*, a cross of *Cochlioda sanguinea* x *Odm. cirrhosum*. Whether or not Keith picked it for its interesting breeding or because of its unusual floral habit I don't know. By combining it with *Odm. pescatorei*, one of nature's true beauties, he created, with a little help from the Almighty, the delightful *Odontioda Shelley*. (Plate 2).

In another fit of inspiration Keith crossed *Oda. Heatonensis* with *Oda. Firedance* to produce *Oda. Nicholas Andrew*, named by Andy Easton in 1980. You will see from the photographs how beautiful and delightfully different the product from this type of breeding looks. You get right away from the tedious round filled in flowers predictably produced by eons of *Odm. crispum* breeding. (Plate 3).

One more cross as yet unnamed from *Oda. Heatonensis* that I have flowered is *Oda. Heatonensis* x *Milt. spectabilis* therefore making a *Vuylstekeara*, with just three distinct species. Surely unique. The flowers in this cross, made by Andy Easton by the way, have all the characteristic shape of *Odm. cirrhosum* and the deep purple colour from *Milt. spectabilis*. What contribution is made by *Cochlioda sanguinea* is hard to say.

A third generation has now flowered at our nursery in the *Odm. cirrhosum* line. The cross is Anne Boleyn x *Oda. Shelley*, now registered as *Oda. Shelley Anne*. Unfortunately the spider look that marks these *O. cirrhosum* (Plate 4), hybrids so clearly has been nearly lost, but to the trained eye still shows in the lip and a certain something about the formation of the flower.

The special joy about this cross was the variety in the seedlings, some pure white with but an odd spot, almost *Odm. pescatorei* in many respects, thru to dark nearly solid purple and all shades between. Only the size of the flowers, around 2" – 2½" prevents them being awarded in Australia, overseas judges with more experience may think differently.

As for the future we are making a lot more crosses with *Oda. Shelley*, having



1. *Odm. cirrhosum*



been fortunate to get a flask of the remake some years back, from which we flowered some very nice clones.

*O. cirrhosum* itself has been reluctant to breed, perhaps part of the reason it has not been used more frequently. We will keep on trying not only because of its graceful, pretty flowers but because we find it relatively easy to grow and flower, a habit shared by its progeny, all of which we have found quite easy to cultivate. In fact *Oda. Heatonensis* seems to have survived in many collections from the original make, way back at the turn of the century. Of all the hundreds of crosses made in the halcyon days of *Odontoglossum* breeding not many have seen it thru to the renaissance of the alliance in the eighties.

As with all these articles "behind the species" that I am writing, I am not pretending to present the whole picture, rather my personal experience of growing and flowering these hybrids combined with observations at nurseries and the thoughts of others closely involved with hybridizing the *Odontoglossum* alliance. One such person is Milton Carpenter of Everglades Orchids who certainly leaves no avenue unexplored in his search for temperature tolerant *Odont.* In fact one of his crosses that flowered recently at Mt. Beenak was a delightful primary hybrid of *Odm. cirrhosum* x *Onc. macranthum*, as yet unregistered. The plant flowered precosiously with tiny bulbs producing 2-3 flowers. The following year they gave us branching stems with 10-12 flowers, we expect much more yet. The flowers themselves were predictably half-way between the two species, yellow and brown in colour, very much *Odm. cirrhosum* like in shape but with quite wide segments. The lip bright yellow with a ring of red brown marks around the crest and perfectly heart shaped. We have great hopes for this as a parent probably taken into the *Odm. bictoniense* line to produce reds and oranges.

To finish this look at *Odm. cirrhosum* lets look at one more cross, that is *Odm. Elaine*. (Plate 5). The famous primary between *O. cirrhosum* and *Odm. harryanum* that Charlesworths registered in the same year, 1906, as they registered *Oda. Heatonensis*.

We are now flowering the remakes using two fine species as parents. Its interesting that when we offered the seedlings for sale not many wanted them — but see them in flower with stems 3' long and masses of those strange long legged spidery type flowers, well you know they are irresistible.

Clive Halls,  
Mt. Beenak Orchids  
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2. Oda. Shelley "Beenak" — C. Halls

4. Oda. Shelley Anne "Beenak". — C. Halls



5. Odm. Elaine. — C. Halls





***Paphiopedilum malipoense* S.C Chen & Tsi.**

Two very distinct floral forms have been discovered of this remarkable species. In the early days after its rediscovery, very large specimens were encountered. Not only do the leaves reach a ponderous size (some up to 50cm in natural spread), but also the flowers are incredibly large (our largest was 93mm). The other form is considerably smaller rarely reaching 6cm in flower diameter even though the leaves are the same size as the larger forms. The original article and sheets forwarded do not resemble the plants currently being imported. The plants are found in the areas of Malipo, Fu-ning, Ma-kwan in China. Culturally the plants require very cold winters (8-10°C), to initiate the flower spikes. The species is also mildly fragrant on warm days and contains two pollinia on each side of the staminode. The spikes are very long at times up to 95cm, and under good culture throwing double flowers.



***Paphiopedilum armeniacum* Chen & Liu.**

Unlike *P. micranthum* the foliage of this species is very smooth and not as wide. The golden flower was thought to have incredible hybrid potential, however most hybrids flowered so far have produced inferior quality progeny. *P. armeniacum* tends to rot more easily than the other two so should be watered more carefully and less frequently. To protect its habitat from persecution (which has already happened), the habitat is best described as the higher elevations of Yunnan, China.



***Paphiopedilum emersonii* Koop & Cribb.**

The foliage of this species does not conform structurally to the other members of the *Parvisepalum* members. The leaves are plain, almost unvariegated and strap leaved. On closer examination the leaves exhibit very faint veining. Again to protect the species in its natural habitat the species origin is said to be southern Yunnan Province. The two pollinia on each side of the staminode is also an interesting phenomenon.



***Paphiopedilum delenatii* Guillaumin.**

Discovered in 1913, this species had formerly been grouped in the *Brachypetalum* subgenus. After the discovery of the other species mentioned, *P. delenatii* was placed in the abovementioned subgenus. The firm of Vacherot and Lecoulle were instrumental in the early propagation of this species and perhaps saving it from horticultural extinction. The flowers are mildly fragrant on warm days. The species originates from Tonkin, North Vietnam.



***Paphiopedilum micranthum* Tang & Wang.**

The 'Bubble Gum' pouch of this species is perhaps its most visually attractive feature. The clone 'Janet' AM/OSNSW-AOC featured a pouch which was almost the size of a tennis ball. The stoloniferous reproduction of this species is perhaps the most numerous of the three species, sometimes producing up to 5 stolons per mature growth. The species is easily distinguishable from *P. armeniacum* when not in flower by the 'Golden Thread' at the tips of the foliage. The plants occur in the areas of Malipo, Fu-ning, Si-chou District of Yunnan. A natural hybrid has also been found between the two species *P. malipoense* and *P. micranthum*.



# Subgenus *Parvisepalum*

Text: R.D. Kramer

Photography: Salvador Castelo

**W**hen the flood of Chinese *Paphiopedilum* species started to infiltrate the horticultural world, the eminent botanists Karasawa & Saito felt compelled to erect a new subgenus to incorporate the new finds, as current subgeneric classifications were inappropriate. The chosen name was derived from the Greek 'parvus' meaning small or puny. This referred to the narrow dorsal sepal characteristic of members of this Subgenus.

The species which make up the *Parvisepalum* Subgenus are as follows:

1. *Paphiopedilum malipoense*  
S.C Chen & Tsi
2. *Paphiopedilum armeniacum*  
Chen & Liu
3. *Paphiopedilum micranthum*  
Tang & Wang
4. *Paphiopedilum emersonii*  
Koopowitz & Cribb
5. *Paphiopedilum delenatii* Guill.

The historical aspects of these species have been well documented in other journals so will not be dealt with here, rather the cultural aspects will be focused upon. *Paph. armeniacum* and *Paph. micranthum* exhibit a unique mode of proliferation; by both basal shoots and stoloniferous offshoots. At times I have seen it mentioned that *Paph. malipoense* also propagates by stolons, I can verify that stolons are produced. In areas where there are very deep humus layers, new growths must keep their 'heads above water', in order to prevent the growths from being totally covered and eventually rotting and dying. The remaining two species, *Paph. delenatii* and *Paph. emersonii* have not to this date been recorded in having anything but basal shoots. It has been postulated that the production of stolons is a survival mechanism in areas where the surface on which the plants grow are very uneven and fluctuate excessively in moisture content. Under good cultivation this stolon production can be five to one. Obtaining specimen plants is quickly achieved.

Before the discovery of the additional four species from China, *Paphiopedilum delenatii* had been 'lumped' (for choice of a better word), into the subgenus *Brachypetalum*.

Plant enthusiasts and some botanists felt this to be quite inappropriate. Structurally, *Paphiopedilum delenatii* bore a resemblance to members of the subgenus *Brachypetalum*, but genetically the similarity ended there. *Paphiopedilum delenatii* was removed from the subgenus *Brachypetalum* and into *Parvisepalum* due to its closer affinities with the other members of this subgenus.

In order to grow species orchids well, it can be very advantageous to know in what type of habitat the species exists. It is however unwise to exactly copy the conditions (which is almost impossible). Glasshouses can never really be seen as model habitat, rather aspects of the environment must be copied. As always these cultural suggestions must not be followed to the letter as each grower and each grower's environment are individual. What works well for one person does not necessarily work for the next.

The main reason people grow orchids is invariably for the beautiful blooms which they may at some future time display. The *Parvisepalum* group inhabits areas which are extremely cold in the dry winter months. If these plants are grown warm in the winter (above 12°C) then the chances of flowering the plants is extremely remote. American growers are finding this to be the case and those that have been flowering them for the first time are only doing so because of the already initiated flowering hormones of newly imported plants. Our plants have now flowered for the third successive season as our temperature drops to 10°C in the winter months. *Paph. malipoense* in particular has been recorded to be covered at times with what appeared to be snow or heavy frost in their native habitat. This drastic cultural measure would be unwise. The humidity should be kept high in the warmer growing period and reduced considerably when the buds begin to open. Once open, they damage quickly from rots if the humidity is too high. Mixes for all the species in this group require regular and very even moisture content. Repotting should be done in the period of dormancy, as once the stolons have been initiated, damage is

usually inevitable. A mix which retains an even moisture content but does not allow the mix to get soggy and acidic is essential. The Optimum PH under our conditions has been around 5.5 — 5.7. Very acidic mixes quickly reduce the rootball to a soggy mess.

If the mix is too fine and badly aerated, the stolons usually rot. *Paph. micranthum* initiates its flowering sheath around November under our conditions and will remain in a dormant state until June of the following year, when they then burst into magnificent bloom. The huge pouch (at times the size of a tennis ball as in the clone 'Janet' AM-OSNSW-AOC), is truly superb and one wonders how the plant was ever christened with the name *Paph. micranthum* (minute-small). Although bark based mixes have been used almost exclusively in Australia, the trend is changing with *Sphagnum* and Rockwool increasing in popularity. We have now been experimenting with Rockwool for some time and are very pleased with the results. This will be the subject of a future article, but briefly the advantages of this inert medium is that it does not break down, therefore limiting the need for repotting and disturbance to the plant. Growth is about twice as fast as in bark.

Continued next issue  
Wilton *Paphiopedilum*  
Research Collection

## HUMIDIFIERS

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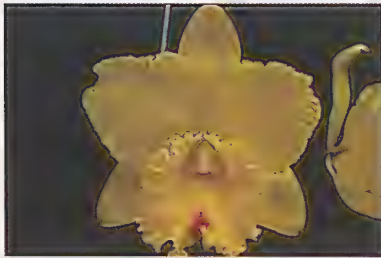




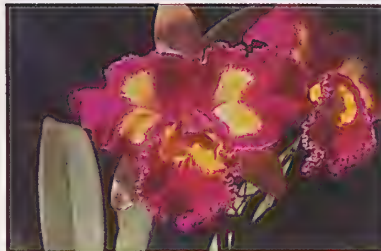
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# PLANT HYGIENE

(The art of growing healthy plants.)

by: Alan J Merriman.

**W**hat is hygiene? Hygiene is the preservation of health, the science of health which comes from the Greek word *hugies*, which means healthy.

To grow orchids successfully regardless of being species or complex hybrids, a healthy environment is essential. First the growing area and its surround must be clean and tidy. Do not leave old pots or tins around the growing area. Old pots form a good haven for slugs and snails. Old fertilizer bags must also be put away. Again they can harbour crawly pests that can eat your precious flowers. A few pellets of **Baysol (R)** can help keep snails and slugs under control. Weeds should be kept under control. Do not let them grow up against the green house or glass house. Under the benches should be free of all herbaceous materials. **Erase (R)** which is

a granular herbicide can be used to control weeds under benches. It is advisable not to use granules if the growing house is on a slope. If it is, after rain or watering the chemical ingredients may run down the hill and could do damage to trees or shrubs that you may have in the bottom of your yard. If you are in doubt regarding the use of **Erase (R)**, there is a very good herbicide called **Weedazol Total (R)**. This is a powder and is mixed with water. It is a general knockdown herbicide that controls many annual and perennial grasses and weeds such as *paspalum* and *kikuyu*. Care must be taken to see that spray drift does not go onto your favourite orchid. *Cymbidiums* are quite tolerant to **Weedazol Total (R)**. If you are troubled with onion grass, nut grass, *oxalis* or couch grass under your benches **Weedazol TL Plus (R)** may be

used. This is a liquid that is mixed with water. Again, be careful of spray drift.

If you have a weed problem around the perimeter of your glass house or shade house, the above two herbicides may be used. Some growers use pre-emergence herbicides under their benches to stop the germination of weed seeds that may have been blown in by the wind or spread by bursting seed capsules from weeds that have been growing in your orchid pots. Two main pre-emergence herbicides that orchid growers can use are **Gesatop (R)** and **Tenorant (R)**.

During the growing period, orchids need all the nutrients and moisture that can be made available to them. If the pot is choked with weeds, the orchid can quite easily come off



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second best in the competition for  
nutrients and moisture. The removal  
of all weeds from the pot is essential.  
These can be removed manually or by  
chemical means. If you have a large  
cymbidium collection and have over-  
head irrigation, some growers use  
**Tenoran (R)** or **Gesatop (R)** for their  
weed control. One must be very care-  
ful when using these pre-emergence  
herbicides, one mistake in your calcu-  
lations, well it could mean no weeds  
— also no orchids.

In a miscellaneous collection and if  
you have plenty of time, one can paint  
the weeds with a small artists paint  
brush dipped in **Roundup (R)**. In the  
United States orchid growers there use  
**Monuron** at a rate of two level table-  
spoons (powder) to three gallons (US.)  
of water. Approximately one teaspoon  
of solution is sprayed over a six inch  
pot. **Diuron** can be applied at the rate  
of two level tablespoons (powder) in  
two gallons (US) of water. A light  
spray is applied to the top of the pot.  
Remember these two herbicides are  
not registered for use on orchids in  
New South Wales. I have used  
**Monuron** liquid at the rate of 5ml in  
litre of water. This worked well on  
cattleyas. The top of the pots were  
misted. This was re-applied twenty  
one days after it was first applied.  
Remember one over zealous appli-  
cation and your plants are dead. Again  
this chemical is not registered for this  
use.

Now that your surroundings are in a  
healthy state have a good look at your  
plants. Are they too close together? Is  
there enough air circulation. If there is  
not enough air circulation between  
your plants you could find black spots  
on your leaves, maybe there is a smell  
around your plants. Could it be the  
dreaded rot? In other words the plants  
are growing in a unhealthy environ-  
ment. If the plants are well spaced,  
good air circulation between plants,  
good sweet growing medium, plenty of  
light you should not be troubled by  
bulb rots. If you do have a bulb rot  
problem, there are two good fungicides  
that can be used, **Fongarid (R)** and  
**Ridomil (R)**. These two fungicides will  
control *Pythium ultimum* and  
*Phytophthora cactorum* if used correctly.  
If they are not used as recommended  
by the manufacturer the chemicals will  
not work. **Ridomil (R)** is also available  
in a granular form.

Spots and rusts are usually control-  
led by any of the usual broad spectrum  
fungicides. I have a special like for  
**Dithane 45**. This seems to work very  
well for me on most genera.

If you have a healthy environment  
you should not be troubled by many

insect pests. If your plants are growing  
well they seem to withstand outbreaks  
of most pests. Have you mites it  
always occurs in a corner of the green  
house that does not have good air  
circulation or it is up against a wall in  
your glass house. These little mites can  
be controlled by a recognised miticide.  
My favourite is **Torque (R)**, **Mitacron**  
**(R)** and **Neoron (R)**.

Scale insects can be controlled as  
necessary with white oil or if they are  
stubborn, **Supracide (R)**. Scale insects  
only attach to plants that are too close  
together, i.e. bad culture — no air  
circulation.

Flower spotting can be a problem if  
you do not have the right conditions.  
This is caused by the fungi *Botrytis*  
*cinerea*. Flower spotting can be most  
troublesome during cool, damp  
weather where there is inadequate air  
circulation. Removal of all old  
flowers, and vegetable matter off the  
floor is most important if you wish to  
control the spotting. An unhealthy  
atmosphere leads to flower spotting. If  
by any chance you have an outbreak of  
flower spotting, it can be controlled by  
the use of the fungicide **Benlate (R)**. It  
is used at the rate of 1 tablespoon per  
gallon of water i.e. 8ozs per 100 gal-  
lons.

Paths should also be kept clean of all  
mosses, algae, hornworts and liver-  
worts. Most herbicides watered onto  
the paths will remove them. Some of  
the iron compounds will also control  
them. **Tenoran (R)** is used overseas to  
control mosses on paths as well as on  
the top of pots. Bleach and acid is also  
used to control algae etc off paths.

Remember if you keep your growing  
and flowering area in a clean healthy  
condition, you cannot help but pro-  
duce well grown plants that produce  
beautiful flowers.

As you can see, from the above  
notes, plant hygiene is extremely im-  
portant to the orchid grower. ■

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Our latest catalogue contains our flask lists for Cattleyas, Zygopetalums and Native Dendrobium. It is available on request.

Our last offerings of these genera were sold out within 10 weeks of our catalogue being circulated. We suggest that, to avoid being left out, orders should be lodged promptly.

ALL inquiries for flasks must now be directed to GLENWOOD ORCHIDS at the above address. Clients may continue to take delivery of flasks from resellers if they wish, but all orders must be lodged with us.

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For a copy of our catalogues, etc. please contact us DIRECT, and mention which orchid genera are required, whether plants and/or flasks are required, and which flask size(s) are preferred.



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The genus *Cymbidium* is a widespread one that is found from Japan and China through India and the South East Asian area to Indonesia, New Guinea and Australia. Some species of the genus grow in the ground as true terrestrials. There even are a few saprophytic species. Others grow in trees but mostly where a gathering of humus or something else they can put their roots into is present.

While the genus originally came to Australia via Asia and Indonesia the 3 Australian species are very widespread and well suited to the environments they grow in.

*C. suave* and *C. madidum* have similar flowers but differ in their habits of growth.

*C. suave* grows on positions in trees where its roots can get down into the rotting inside. It often is in hollow branches, in tree stumps and on fallen logs on the ground which are rotting inside but have a hard outside shell with enough cracks in it to allow the seedling to germinate and become established. Its roots will extend for 3 or 4 metres or more down the inside of the trees. The main growing medium the roots are in is a red-brown rotting wood that seldom dries out.

I have seen a few small plants growing on the side of paper bark *Melaleuca* sp. On the living tree the bark is moist except in the outer most layers. While these plants were healthy and had flowered the orchid does not seem particularly suited to this habitat.

A friend of mine who owned a timber mill has observed seedlings of *C. madidum* or *C. suave* in sawdust heaps.

The stems of this species are not pseudobulbs and they grow for a number of years. This habit is an advantage to the plant as the limited area of the hollow where it grows does not become blocked with old pseudobulbs.

The leaves mostly are about 20-40 cm long and they are narrow and arched. When old they break cleanly at a set point near the base and fall as in most other *Cymbidiums* including the other 2 Australian ones.

In Southern N.S.W. it flowers in December and January but it becomes earlier further north in its habitat. It usually flowers later than all but a few of the hybrid *Cymbidiums*.

Racemes are arching and the flowers are rather closely packed. They are about 2-3 cm wide and are light green, golden green or a rather dull brownish green. The last mentioned is most common in this area. The labellum is dark reddish brown in the basal part. The flowers have a pleasant and sweet perfume.

*C. suave* mostly occurs in moister Eucalypt forests of the coast and ranges and it grows in habitats which vary from moderately shaded to full sun. It grows in some rain forest habitats but only in



*Cymbidium canaliculatum* 'Northmead'  
Superior colour form of this species often incorrectly known as 'var sparkesii' — PHOTO: DAVID BANKS.

# The Native Australian *Cymbidiums*

by Steve Clemesha

positions where it receives plenty of light.

As the bases of its long narrow stems go deep into its growing medium it usually will regrow after bush fires.

It avoids dry inland forests and is found from Southern N.S.W. to about Cooktown in Queensland.

In cultivation it does not adapt very well to pot culture and despite many tries

few can truthfully claim long term success. It can easily be transplanted into tree stumps that are starting to hollow at the centre. If one does not have one available it will also grow well in sections of hollow log about one metre or more long. These can be collected and stood upright in your orchid house or garden. Once established it will require little or no additional water.



*Cymbidium suave*  
Superb flowering of a specimen plant owned by well known Sydney orchid grower — Norm Shipway. — PHOTO: DAVID BANKS.



*Cymbidium canaliculatum* 'Northmead'  
Superior colour form of this species often incorrectly known as 'var sparkesii' — PHOTO: DAVID BANKS.



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These remarks only apply to areas within its natural habitat. I do not know if it would work in colder or drier climates. Probably it would with some modification for summer watering and cold protection.

*C. madidum* grows in hollow limbs and stumps etc as does *C. suave* but it also grows among epiphytic ferns growing on dead tree ferns. When on forest oaks it usually grows in major forks of the tree where a gathering of oak needles and bark has been when the plant begins growth and its own roots add to its compost. Though called epiphytic this species only grows in positions where its roots have some bark or other compost they can send roots into. They do not usually have all their roots exposed to the air like most *Dendrobium* etc species.

The habit of *C. madidum* is much like that of a hybrid *Cymbidium* in that it has true pseudobulbs usually up to about 6½ cm high. The leaves are green to yellow green and arching. The flower racemes also are arching with about 15 to 70 flowers which are more spaced than in the other Australian species. The flowers are about 3 cm wide and are green brown to dark brownish. The labellum has a dark brown or black patch near its middle as in *C. suave*.

An attractive golden green form occurs in north Queensland. It often is present in the same areas as the brown form and it seems to be too common to be an albino or semi albino form.

*C. madidum* var. *leroyi* differs from *C. madidum* var. *madidum* in that the edges of the front lobe of the labellum are bent upwards to give the lobe a boat like appearance. It can only be distinguished when in flower and it is not common in cultivation. Plants sold as in the past have often turned out to be var. *madidum*.

In N.S.W. *C. madidum* is found in coastal swamps, lowland rainforest and in open forests of hills that are within a few km of the coast and are not very high in altitude. In some localities it is plentiful and *C. suave* is also. I have looked for natural hybrids but not found any.

Clumps are damaged by bush fires but usually parts of larger ones survive and recover especially if fires are fairly infrequent and not too intense.

In Queensland *C. madidum* extends north to Cape York and to altitudes up to 4000 ft in the North.

Both the attractive golden green form and brown forms are commonly cultivated. Some growers grow it well in pots like a hybrid *Cymbidium*. Others prefer large tubs or baskets. For me it has grown well in baskets of Platycerium fern fibre and tied onto trees with Platycerium ferns around its base. It also can be put in hollow stumps like *C. suave*.

*C. canaliculatum* like the other two Australian species grows in hollow

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branches and stumps with its roots growing into the rotting wood. It is essentially an orchid of the drier country and it is absent from moist coastal and mountain areas where most epiphytic orchids are found. It is mainly an orchid of the inland but it extends to drier areas on the coast, eg near Grafton, east of Rockhampton and open Eucalypt forest areas of north Queensland. It extends across inland northern N.S.W. and Qld to N.T. and northern W.A. It grows in some areas with cold winters and heavy frosts eg Glen Innes and Roma Qld. Temperatures where the orchids are in the trees would be less severe than at ground level but never the less would at times be below freezing point.

This species pseudobulbs up to about 12 cm tall. It's rather rigid leaves are grey-green and channelled so that when rain falls it is directed down the leaves to the base of the plant. Flower racemes are more erect than in the other species. Flowers are numerous and have sepals and petals in anything from all green to all red while the labellum is white with red markings. Through most of its range flowers of this species are green with red markings. It is not uncommon for no two clones in an area to be identical though all are basically of the same type.

An albino form with pure green sepals and petals and a pure white labellum has been found and selfed seedlings of it now are available.

In north Queensland the form with sepals and petals pure solid maroon red is common. It was named *C. canaliculatum* var. *sparkesii*. This variety along with all others were reduced to synonyms as from a botanical point of view if the species is viewed as a whole all sorts of variations lead to up var. *sparkesii*.

The use of the name by orchid growers has persisted and I think its use is justified as this variety is widespread and plentiful in a large part of Queensland.

*C. canaliculatum* is not an easy orchid to cultivate especially in mild coastal areas with high rainfall and reasonable summer humidity. In parts of coastal Queensland higher summer temperatures partly compensate for high rainfall and humidity and the plant will do well if sheltered from most of the rain.

Some success is obtained on the N.S.W. coast where plants have been grown in glasshouses and placed in positions near the roof where day temperatures are higher.

None of the Australian cymbidiums grow as easily as the hybrids but two of them are easy provided you are prepared to give them a bit of special attention.

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Milt. ( Purple Queen x Minas Gerais ) x Milt. Tropic Dawn 'Gold Wings'  
Milt. bluntii x (Odt. Glass Creek x Milt. colwesii)  
Den. (Ng Eng Chow x Mary Trowse) x canaliculatum — green  
Den. John Kidney x canaliculatum — yellow  
Den. Gloucester Sands (remake using dark parents)  
Den. Pauline x canaliculatum — purples  
Lc. Yung Hua 'Venus' x Blc. Toshie Aoki 'Pokai' — gold and scarlet  
Blc. Greenheart 'Fantasy' x Blc. Trojan Gold 'Rose Marie' — green  
Slc. Helen Velliz 'Orange Glow' x Slc. Madge Fordyce 'Fire Brigade' — reds  
Bc. Mount Anderson 'Summit Snow' x C. Earl 'Imperialis' — white  
C. Penny Kuroda 'Spots' x Lc. Mishima Star — lav. pink with flares  
Lc. Persepolis 'Splendor' x Blc. Waikiki Sunset 'Brightest Orange'  
Blc. Bouton D' Or 'Lewis' x Slc. Hazel Boyd 'Royal Scarlet' — gold & scarlet  
Slc. Tangerine Jewel x C. velutina — orange  
Slc. Tangerine Jewel x Soph. coccinea — reds  
Blc. Yellow Ball 'Sunshine' x Blc. (Tiara x Bouton D' Or) — gold

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# Control of *Glomerella* in *Cymbidium*

## Introduction

In any season *Cymbidium* varieties suffer from slight infections by *Glomerella*, but during a wet season these increase in number and severity. At the worst, a high percentage of plants in collections are killed.

## Latent Infection

This occurs when an infection is limited to a cluster of cells, and remains invisible, as long as it is being suppressed by inhibitors. Thus sprays applied after a period when plants have developed latent infections can appear to be ineffective, because there were already latent infections in leaves.

## Fungicidal Control

The experiment was set up in the hope that spraying of new leaves from December onwards could give some disease control. The chemicals used were benomyl, (Benlate<sup>®</sup>), Bordeaux mixture, chlorothalonil, (Daconil<sup>®</sup>), phosphorus acid, (Fosject<sup>®</sup>), prochloraz, (Octave<sup>®</sup>) and sodiumphenyl phenate, (Natriphene<sup>®</sup>). These were applied at rates given in Table 1 at approximately three weekly intervals for benomyl and prochloraz from December 11, and fungicides were applied from February 22 onwards. There were eight plants in each treatment. Results were taken on May 19.

## Results

The results indicated good control of the disease by Bordeaux mixture, chlorothalonil and phosphorus acid, mediocre control by benomyl, and poor control by both prochloraz and sodiumphenyl phenate.

## Discussion

There are two important points

## Acknowledgement

This project was made possible through a grant by the Stock and Nurseries Fund, the assistance of Phillip Woodward, Tony Banks and Leon Saunders of 'Orchids Abloom', and technical assistance of Yee Fwe Freeman.

from this work, the obvious one being, that if either Bordeaux mixture, or chlorothalonil is applied after December and preferably throughout the year, there will be good disease control. Evidently the prevention of further infections in the period after December had an effect that overrode the existing latent infections.

The other aspect is, that phosphorus acid controlled the disease. This was a little unexpected, as this chemical had previously only been used to control the root—rotting fungi *Pythium* and *Phytophthora*. It controls these by the unique means of stimulating the natural resistance of plants to these fungi, and evidently there is also a cross resistance to other fungi, quite unrelated to the two mentioned.

## Conclusions

In practice Bordeaux mixture remains a effective control measure, but it can be replaced by chlorothalonil in powder form (Bravo, Daconil) especially during the flowering period when Bordeaux damages the spike.

Subject to registration, phosphorus acid as Fosject or in another form as Aliette should also be used as a spray drench, because it has a different method of disease control, applied every 6 weeks. Also Bordeaux mixture or chlorothalonil (Daconil) should be

applied every 3-6 weeks throughout a year. In a pilot study either Bordeaux mixture or chlorothalonil can be mixed with phosphorus acid without any reduction in their effectiveness.

It is possible that phosphorus acid will reduce the effect of other diseases of orchids, but it has no effect on the new disease 'Brown Root Rot'.

## General Recommendations

1. If possible grow *Cymbidiums* in an area with a glass or plastic roof and open sides.

2. Spray regularly as advised.

3. Tear off diseased leaves to prevent infection getting into the pseudobulb and killing the plant.

4. Where possible grow resistant or semi-resistant varieties.

Bruce Taylor,  
Plant Pathology Branch,  
NSW Agriculture & Fisheries,  
Rydalmere.

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TABLE 1. Control of *Glomerella* infections in *Cymbidium*.

Treatment	Fungicides Trade name	Rate per 100 litres	Average Disease Index*
No treatment			3.8
Benomyl	Benomyl (R)	50 g	2.9
Bordeaux mixture	—	2 kg	0.3
Chlorothalonil	Daconil (R)	150 g	0.3
Prochloraz	Octave (R)	30 g	2.1
Sodium phenyl phenate	Natriphene (R)	500 g	2.3
Phosphorus acid	Fosject (R)	600 ml	1.0

\* The disease index was: 0 healthy; 1 mild; 2 moderate and 3 severe infections; 4 dead. Thus an index of 4.0 indicated that all plants are killed, and one of 0.0 indicates that all plants are healthy.



Sometime ago I saw an advertisement in the A.O.R., *Phalaenopsis* from A.B.C. Orchids. Being an avid phaly grower I thought I should go and see this L. Mayer. I did nothing about seeing this chap until while over in New Zealand I visited another phalaenopsis grower who suggested I drop in and see this Lou Mayer!

On returning from N.Z. I made an appointment to see who this *Phalaenopsis* grower was.

Lou was a fascinating chap and all he could talk about was the future of *Phalaenopsis* in Australia. So let's start at the beginning.

Lou got the orchid bug around 1975. At that time Gordon Lownes was President of the North Shore Orchid Society and as he lived only across the road Lou was hooked. Once hooked Lou started to grow everything – that is, plants that would grow in a shade house. After the shade house he soon found a glass house was required. After scavaging around the local tip he found plenty of glass to glaze the new flowering house. Now that he had a shade house plus a glass house he decided he should concentrate on cymbidiums and grow them properly.

He decided to confide in Alvin Bryant regarding what to do-grow etc. So Lou handed over \$800 and in return received a car load of the latest mericlones.

Things went well, but then he realised that everyone grows *Cymbidiums*!

Around eight years ago he met Phil Spence. Phil showed him some *Phalaenopsis* blooms. This was the turning point. *Cymbidiums* out, *Phalaenopsis* in. The problem was Lou only had a small glass house and of course it had to be heated.

After the first quarter he received his first power bill – \$389!!!, panic, how can anyone afford to grow *Phalaenopsis*.

He decided that the only way to cut costs would be to insulate the walls, so a new house had to be built. Lou decided to convert his garage into a phalaenopsis house. The roof was removed and replaced with Alsynite and the walls insulated. Heating the house was done by using a small electric fan heater.

The house was finished but he still only had a few plants to put in it. As luck would have it Alec Mansour was selling out his whole *Phalaenopsis* collection. So Lou bought the lot.

While this was still going on Lou was worried about the high cost of heating the house. George Withers came to Lous rescue. George suggested that he use a gas hot water service to heat the houses. With Georges help the hot water service was installed. More about their system later on.

As the Mansour collection had to be housed, a new house had to go up. Now

there were three houses to heat.

Now that Lou was really into *Phalaenopsis* he started to look afield to learn – see – and buy. He noticed an ad in the A.O.R., *phalaenopsis* from A.B.C. Lou corresponded with them and before long he was off to Taiwan. While over there he consulted Mr George Chow. From this meeting Lou became a distributor for them, we Australian phalaenopsis growers then had access to the latest *Phalaenopsis* hybrid seedlings.

By now *Cymbidiums* were slowly going. In their place *Phalaenopsis* took over. Now the *Phalaenopsis* have pride of place, next his *Cattleyas* and you guessed it – *Cymbidiums* are now last on the list.

I asked Lou now that he was a *Phalaenopsis* grower, what does he do to maintain a high quality collection? He replied that first of all he buys at least six very good mericlones each year. Then flasks of the latest crosses.

We then moved down to look at the glass houses as it had stopped raining. The houses had A frame benches in them. They reached from the ceiling to the floor. On the top of the frames he grows his *Cattleyas* and further down his *Phalaenopsis*. These two genera seemed to do very well together as the *Cattleyas* needed more light than the *Phalaenopsis* they had the top, and as the *Phalaenopsis* needed a little more shade they were placed further down the rack. The roof had 50% shade for the summer, which was removed for the winter.

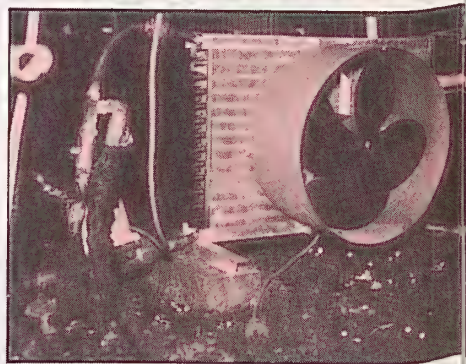
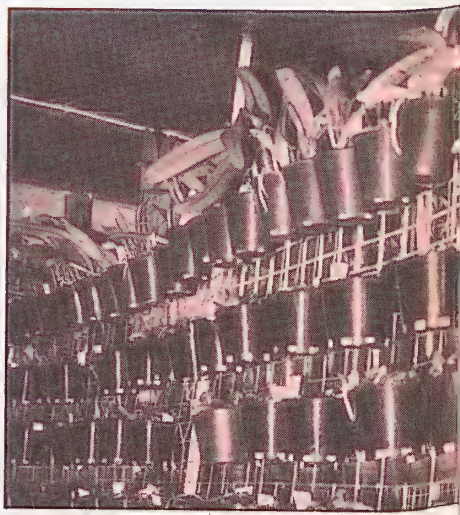
The medium that Lou grows his plants in, is as follows. First he places 50mm of coarse styrene in the bottom of the pot, the 50mm of coarse bark, the plant is then placed in the pot and then the pot is topped up with fine bark. What bark does he use? Well, it is a hybrid mix, 50% sequoia – York's Coarse and 50% of Wondabah's fine bark. I asked why the two sources of bark – cost! He only uses 100mm and 175mm pots. His plants go from flask – community – 100mm then 175mm pots.

He claimed that the best thing about York's bark is that it does not break down, and is reusable. When he repots he washes the old bark and then reuses it. He does not treat the bark at all.

Lou waters his plants every second day in Summer and weekly during the winter. A small amount of fertiliser is used during each irrigation. It is usually used about 1/2 to 1/3 strength. When he waters his plants

# Growing Phalae

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From top to bottom: *Phalaenopsis* growing racks. Condense



# nopsis

er

he makes sure that they receive plenty of water.

Pest control is not needed. With good culture, pests keep away except for the dreaded garlic snail. He finds the best way to get rid of them is to go down at night with a torch and squeeze them with your fingers.

The plants get very few diseases, if a plant happens to get a leaf rot, he removes the leaf completely and places the plant on his hospital bench! Flower spotting is no problem as he has fans going 24 hours per day. Good air circulation is essential.

Lou decided to improve the strains of green and yellow *Phalaenopsis* a few years ago. He is hoping to see his first results this Spring. He is also interested in whites for the export market. He is aiming at good whites on a strong straight *Raceme* without any branching. These *Racemes* should have between 12 to 16 flowers on them. This makes sense – how can you pick a branched *Raceme* easily and quickly for the overseas market? He feels that eventually *Phalaenopsis* will take over from *Cymbidiums*!

I then asked him what parents should produce he ultimate in *Phalaenopsis*? In whites he suggested P.Mt. Kaala 'Mt Elegance'. P. Gladys Reed 'Snow Queen', P. Winter Kaala + the flowers are fragrant, for heavy textures whites P. Carmela's Dream. For pinks *Dpts* Odorika 'Nishiizu', P. New Eagle



an pump. Lou and one of his Cattleya's.

'NFSNo1' and P. New Angle. White with pink labellum, *Dpts* City Girl, *Dpts* Hamakita Beauty 'Fen'. He does not like novelty crosses, one must specialise, and have an aim for perfection. A.B.C. Orchids have been helping Lou with his breeding programme so in the future we can look forward to seeing some champion *Phalaenopsis* flowers, Lou was saying that very soon we in Australia will be able to purchase the very best of stem propagations until they are 100% sure that there will not be any mutations.

I asked Lou how long does he take to flower his seedlings? He replied that he gets 50% into flower within 3 years and 80% in 4 years. He breaks off all first flowering racemes! He claims that the bigger the leaf span, the better it is to judge the quality of the first flowering blooms.

At the moment Lou is now setting up his own lab. This will ensure that he will be able to release the latest replates as soon as possible to the orchid growing public.

If you want to hear about the future champion *Phalaenopsis* or maybe purchase one of the latest stem propagations, I am sure Lou will sit down and tell you all about them. As the rain was still coming down in buckets and as I had been there all morning hearing about *phalaenopsis* I decided I had to make a run for it. Yes, it is sure makes one want to grow those wonderful plants called *Phalaenopsis*.

Lou's glass houses are of the following dimensions: 2 houses 5 metres x 6 metres x 3.5 metres high and one 8 metres x 6 metres x 3.5 metres high.

The houses are polythene lined, all have isolating fans set high up on the roof. The A frames are 8 feet high.

The heat is supplied from two L.P.G. hot water heaters. The water is pumped from the heaters into a refrigeration unit condensor, approx. 18 inches x 14 inches. The condenser has 3/8" pipe running through it. The houses are maintained at 18°C. The condensing system only holds 8 litres of water so very little water has to be reheated by the heater.

Problems: The first year of operation he witnessed a lot of bud drop. After many enquiries he discovered that the air from the coils was too hot. So now he runs the hot water heaters at 150°F, also the pump and fan now come on together.

Lou has also connected the pump between the condensor and the hot water service. This way the pump does not have to push the very hot water around. These pumps were purchased from Percival Products.

Cost of heating the 3 *Phalaenopsis* houses and including his domestic use of the gas is approximately \$700 per year. ■



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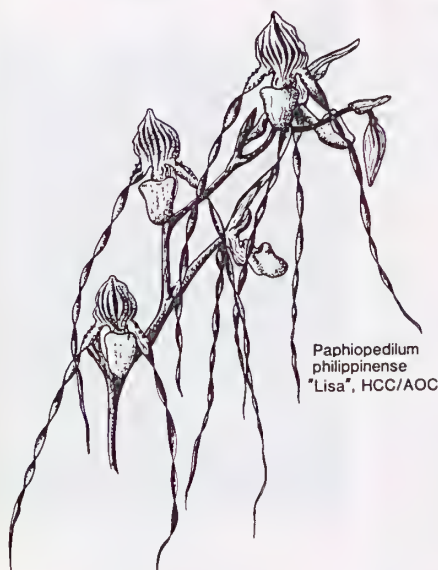
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### Part Two — Miscellaneous species and hybrids

NAME	IMMATURE SEED- CAPSULES		RIPE (SPLIT) CAPSULES
	AGE — DAYS	DAYS TO GERMINATION	AGE — DAYS
<i>Aerides</i> spp. & hybrids .....	150-180	—	—
<i>Aerides fieldingii</i> x self .....	—	—	272
<i>Ansellia</i> spp. & hybrids .....	150-180	—	—
<i>Ascocenda</i> hybrids .....	120-190	—	—
<i>Ascentrum</i> spp. & hybrids .....	120-200	—	—
<i>Bletilla striata</i> var. <i>alba</i> x self .....	—	—	253
<i>Brassavola cucullata</i> .....	75-80	—	—
<i>Brassavola nodosa</i> .....	70-75	—	—
<i>Brassia</i> spp. & hybrids .....	450	—	—
<i>Broughtonia</i> spp. & hybrids .....	60-75	—	—
<i>Broughtonia sanguinea</i> x <i>Enc. vitellinum</i> .....	—	—	61
<i>Bulbophyllum</i> spp .....	140-180	—	—
<i>Chysis</i> spp .....	140-180	—	—
<i>Cirrhopetalum</i> spp .....	140-180	—	—
<i>Cirrhopetalum gusdorfii</i> x self .....	—	—	180
<i>Cirrhopetalum rothschildiana</i> x self .....	—	—	190
<i>Cirrhopetalum rothschildiana</i> x <i>fascinator</i> .....	—	—	146
<i>Coelogyne fragrans</i> x self .....	370	—	—
<i>Cymbidium</i> hybrids .....	220-300	—	—
<i>Cyrtopodium</i> spp .....	150-270	—	—
<i>Dendrobium albosanguineum</i> x self .....	—	—	72
<i>Dendrobium aureum</i> x self .....	207	26	—
<i>Dendrobium bigibbum</i> var. <i>bigibbum</i> x self .....	—	—	292
<i>Dendrobium bigibbum</i> var. <i>phalaenopsis</i> & hybrids .....	120-150	—	—
<i>Dendrobium chrysotoxum</i> x <i>chrysotoxum</i> .....	—	—	236
<i>Dendrobium crystallinum</i> x self .....	264	9	—
<i>Dendrobium devonianum</i> .....	160-250	—	—
<i>Dendrobium findlayianum</i> x self .....	210	17	—
<i>Dendrobium gouldii</i> x <i>phalaenopsis</i> .....	55-60	—	—
<i>Dendrobium</i> ( <i>Kuitana</i> x <i>bigibbum</i> ) x <i>bigibbum</i> .....	89	Nil-too young	—
<i>Dendrobium Lady Hay</i> x self .....	—	—	232
<i>Dendrobium luteiflorum</i> .....	160-250	—	—
<i>Dendrobium moschatum</i> x <i>suavissimum</i> .....	167	40	—
<i>Dendrobium nobile</i> & hybrids .....	200-220	—	—
<i>Dendrobium nobile</i> var. <i>virginale</i> x self .....	224	10	—
<i>Dendrobium parishii</i> x self .....	274	15	—
<i>Dendrobium pierardii</i> & <i>pendulous</i> spp .....	180-210	—	—
<i>Dendrobium stratiotes</i> .....	150-200	—	—
<i>Dendrobium superbiens</i> & hybrids .....	160-250	—	—
<i>Dendrobium superbum</i> & hybrids .....	160-250	—	—
<i>Dendrobium</i> ( <i>taurinum</i> x <i>tokai</i> ) x ( <i>undulatum</i> x <i>gouldii</i> ) .....	55-60	—	—
<i>Dendrobium thysiflorum</i> x <i>fimbriatum</i> .....	182	26	—
<i>Dendrobium thysiflorum</i> x <i>pulchellum</i> .....	182	22	—
<i>Dendrobium thysiflorum</i> x same .....	182	26	—
<i>Dendrobium thysiflorum</i> x <i>tetragonum</i> .....	—	—	180
<i>Dendrobium tortile</i> x self .....	210	10	—
<i>Doritaenopsis</i> hybrids .....	90	—	—
<i>Doritis pulcherrima</i> .....	65-70	—	—
<i>Encyclia atropurpureum</i> .....	150-180	—	—
<i>Encyclia cochleatum</i> x self .....	229	—	—
<i>Encyclia faustum</i> x self .....	208	20	—
<i>Encyclia faustum</i> x <i>tripunctata</i> .....	208	20	—
<i>Encyclia hanburyi</i> x <i>memorale</i> .....	—	—	161
<i>Encyclia hanburyi</i> x <i>prismatocarpum</i> .....	—	—	256
<i>Encyclia mariae</i> x <i>Rhynchoaelia digbyana</i> .....	156	21	—
<i>Encyclia mariae</i> x <i>mariae</i> .....	—	—	213
<i>Encyclia mariae</i> x <i>S.L. Mariottiana</i> .....	—	—	154
<i>Encyclia nemorale</i> x <i>C. bowringiana</i> .....	—	—	313
<i>Encyclia nemorale</i> x ( <i>L. Coronet</i> x <i>L.C. Fieri</i> ) .....	225	49	—
<i>Encyclia nemorale</i> x ( <i>C. loddigesii</i> x <i>L.C. Fieri</i> ) .....	225	62	—
<i>Encyclia nemorale</i> x <i>mariae</i> .....	225	62	—
<i>Encyclia pentotes</i> x self .....	—	—	140
<i>Encyclia prismatocarpum</i> x <i>radiatum</i> .....	—	—	273
<i>Encyclia prismatocarpum</i> x self .....	—	—	108
<i>Encyclia radiatum</i> x self .....	—	—	339
<i>Encyclia radiatum</i> x self .....	258	—	—
<i>Encyclia tampense</i> .....	70-75	—	—
<i>Encyclia vitellinum</i> x self .....	—	—	90
<i>Ephemerantha comata</i> x self .....	—	—	86
<i>Epicattleya</i> & hybrids .....	150-200	—	—
<i>Epidendrum</i> spp. & hybrids .....	120-150	—	—
<i>Epidendrum cooperianum</i> x self .....	—	—	109
<i>Epidendrum psuedepidendrum</i> .....	90	—	—
<i>Epidendrum stamfordianum</i> x self .....	—	—	111
<i>Galeandra baueri</i> x self .....	—	—	279
<i>Laelia anceps</i> .....	120-150	—	—
<i>Laelia cinnabarina</i> .....	110-120	—	—
<i>Laelia flava</i> .....	110-120	—	—
<i>Laelia gouldiana</i> x self .....	—	—	142
<i>Laelia gouldiana</i> x self .....	124	48	—
<i>Laelia harpophylla</i> .....	110-120	—	—
<i>Laelia milleri</i> x self .....	—	—	114
<i>Laelia perrinii</i> .....	120-180	—	—
<i>Laelia purpurata</i> .....	120-180	—	—
<i>Laelia purpurata</i> x self .....	—	—	145
<i>Laelia rubescens</i> .....	120-150	—	—



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## A TABLE OF ORCHID SEED — CAPSULE AGES

Part Two — Miscellaneous species and hybrids — continued

NAME	IMMATURE SEED- CAPSULES		RIPE (SPLIT) CAPSULES
	AGE — DAYS	DAYS TO GERMINATION	AGE — DAYS
<i>Laelia sinacorana</i> x self .....	219	—	—
<i>Laelia tenebrosa</i> x self .....	—	—	332
<i>Laelia xanthina</i> .....	120-180	—	—
<i>Leochilus scriptus</i> x self .....	86	14	—
<i>Leptotes bicolor</i> x self .....	—	—	134
<i>Leptotes unicolor</i> x self .....	185	—	—
<i>Lycasta edeniensis</i> x self .....	—	—	321
<i>Maxillaria</i> spp .....	120-140	—	—
<i>Miltonia</i> spp. & hybrids .....	120-140	—	—
<i>Miltonia spectabilis</i> x self .....	—	—	225
<i>Neofinetia falcata</i> x self .....	—	—	165
<i>Odontoglossum</i> spp. & hybrids .....	80-140	—	—
<i>Odontoglossum pulchellum</i> x self .....	196	—	—
<i>Oncidium altissimum</i> .....	110-140	—	—
<i>Oncidium bahamense</i> .....	65-70	—	—
<i>Oncidium baueri</i> .....	110-140	—	—
<i>Oncidium carthagenense</i> .....	180-240	—	—
<i>Oncidium cavendishianum</i> .....	180-240	—	—
<i>Oncidium cebolleta</i> .....	110-130	—	—
<i>Oncidium equitant</i> hybrids .....	90-105	—	—
<i>Oncidium flexuosum</i> .....	110-140	—	—
<i>Oncidium jonesianum</i> .....	110-130	—	—
<i>Oncidium kramerianum</i> .....	90-120	—	—
<i>Oncidium lanceanum</i> .....	180-240	—	—
<i>Oncidium leucochilum</i> .....	110-140	—	—
<i>Oncidium limminghei</i> .....	90-120	—	—
<i>Oncidium lucayanum</i> .....	65-70	—	—
<i>Oncidium luridum</i> .....	150-180	—	—
<i>Oncidium maculatum</i> .....	110-140	—	—
<i>Oncidium microchilum</i> .....	130-170	—	—
<i>Oncidium papilio</i> .....	90-120	—	—
<i>Oncidium pubes</i> x <i>Rodriguezia</i> <i>gomesioides</i> .....	—	—	190
<i>Oncidium pulchellum</i> .....	65-70	—	—
<i>Oncidium retermeyerianum</i> .....	180-240	—	—
<i>Oncidium sanderae</i> .....	90-120	—	—
<i>Oncidium sphacelatum</i> & hybrids .....	120-140	—	—
<i>Oncidium splendidum</i> .....	130-170	—	—
<i>Oncidium stipitatum</i> .....	110-130	—	—
<i>Oncidium teres</i> .....	110-130	—	—
<i>Oncidium tetrapetalum</i> .....	65-70	—	—
<i>Oncidium triquetrum</i> & hybrids .....	150	—	—
<i>Oncidium urophyllum</i> .....	65-70	—	—
<i>Oncidium variegatum</i> .....	65-70	—	—
<i>Orchis morio</i> .....	35-40	—	—
<i>Paphiopedilum</i> spp .....	240-300	—	—
<i>Paphiopedilum bellatulum</i> x self .....	—	—	282
<i>Paphiopedilum insigne</i> var. <i>albomarginatum</i> x self .....	—	—	348
<i>Phaius</i> spp. & hybrids .....	120-150	—	—
<i>Phaius tancarvilleae</i> x self .....	—	—	254
<i>Phalaenopsis</i> spp. & hybrids .....	110-120	—	—
<i>Pleurothallis ghiesbreghtiana</i> x self .....	—	—	50
<i>Renanthera</i> spp. & hybrids .....	150-180	—	—
<i>Renanthera</i> R.B. Chandler .....	70-75	—	—
<i>Rhyncolaia</i> spp. & hybrids .....	120-180	—	—
<i>Rhyncostylis</i> spp. & hybrids .....	150-250	—	—
<i>Rhyncostylis gigantea</i> x <i>Renanstylis</i> Azimah .....	446	11	—
<i>Rodriguezia</i> spp. & hybrids .....	110-130	—	—
<i>Rodriguezia gomesioides</i> x <i>Oncidium</i> <i>pubes</i> .....	158	34	—
<i>Rodriguezia gomesioides</i> x <i>Oncidium</i> <i>pubes</i> .....	—	—	203
<i>Schomburgkia</i> spp. & hybrids .....	120-150	—	—
<i>Sophronitis</i> spp. & hybrids .....	75-100	—	—
<i>Sophronitis brevipedunculata</i> x self .....	138	Nil-too young	—
<i>Sophronitis cernua</i> x self .....	—	—	147
<i>Thunia marshalliana</i> x self .....	—	—	261
<i>Vanda burgei</i> .....	70-75	—	—
<i>Vanda (cleari x sanderiana)</i> x <i>V. suavis</i> .....	70-75	—	—
<i>Vanda Margaret Foster</i> .....	70-75	—	—
<i>Vanda</i> hybrids .....	150-195	—	—
<i>Vanda Helen Paoa</i> .....	70-75	—	—
<i>Vanda luzonica</i> x <i>sanderiana</i> .....	70-75	—	—
<i>Vanda Patricia Lee</i> x self .....	120-150	—	—
<i>Vanda Patricia Lee</i> x <i>Ascid. Mem. Jim</i> Wilkins .....	90-150	—	—
<i>Vanda</i> species .....	150-195	—	—
<i>Vandopsis</i> spp. & hybrids .....	160-180	—	—
<i>Warszewiczella discolor</i> x self .....	—	—	163
<i>Xylobium squalens</i> x self .....	143	Nil-too young	—
<i>Xylobium squalens</i> x self .....	—	—	233
<i>Zygopetalum mackayii</i> x self .....	223	—	—

### References

Arditti, J. "Orchid Biology — Reviews & perspectives — Vol. 2" Condon,  
S. — Personal communication (Also personal experience)



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**T**he annual Tropical Queensland Orchid Council Conference was held this year in Tully, June 9th - 12th. This conference weekend was a resounding success enjoyed immensely by all registrants. The friendly atmosphere and the organization of this conference ensured its success.

Registrants who enjoyed this annual event came from as far as The Northern Territory, Darwin & Katherine, New South Wales, Victoria, Gladstone, and Rockhampton to add to the many T.Q.O.C. area registrants. Not forgetting here our Patron Mr. Frank Slattery, who has never missed a conference and his good wife Jean who judges the floral art section at these conferences. We are most indebted to

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their continuing support of this event in the far north, considering they live in Sydney.

The conference began on Friday evening with Registration and Light Supper. The catering for this evening left nothing to be desired as did all catering during the conference, including always a plentiful supply of local fresh fruit. After a short address from Tully's competent President Robyn Godbehere, and T.Q.O.C. President Mick Keith, the conference began on a welcoming, happy note. Then we noticed friendly orchid personalities such as Jim Rentoul, whom we would miss if he did not turn up to this event; David Viney from Darwin, known to us all by now, and Bill Poulten from South Queensland who frequents our conferences. Now, that is enough name dropping for now, on with the conference.

Saturday, and the weather was perfect as we set out for the W.M. Memorial Sports Centre at the Showgrounds, where the conference was held. The lectures this morning were all interesting. First speaker was Len Lawler, well known for the work he is doing in the north for the Australian Orchid Foundation. Then Bob Williams spoke on Pesticides, Bob Nevins was the next speaker. He spoke on Cattleyas with slide programme. Bob is well known as a Cattleya Nurseryman in the Cairns district. Rod Shoemith spoke on growing orchids using hydroponics, and last speaker was Norman Hilliger from

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briefly.

After a great lunch, Bushhousing  
began for the majority of registrants.  
The judging of Orchids tabled, Foliage  
and Floral Art also took place during  
the afternoon. I was involved in the  
judging and so cannot report on the  
bushhousing, though I heard all good  
reports.

The Conference Dinner was held on  
Saturday night with the trophies being  
presented. The Frank Slattery Trophy  
for the Champion Orchid was won by  
Allan Hughes, from Ingham, with *B/c.*  
Pamela Hetherington 'Coronation'  
AM/AOS FCC/AOS. Reserve Cham-  
pion, A. Hughes, again with *Den.*  
*Caguas Gigante* Mae Klong River.

The winner of the aggregate points  
Rod Shoesmith Trophy was won by  
Lloyd MacFarlane. Champion Foliage  
plant was won by L. Di Mauro with a  
well grown Bromeliad and the Cham-  
pion Floral Art was won by Mrs.  
Robyn Reid, Townsville.

On Sunday morning the A.G.M.  
and General meetings of the T.Q.O.C.  
were held and were well attended by  
all Delegates and some observers. As  
this was a free morning for the remain-  
der of the Registrants, most took the  
opportunity to see the nearby lovely  
beaches or to catch up on some much  
needed rest.

After another enormous  
smorgasbord lunch, we all headed off  
in buses or private vehicle to an  
afternoon of Bushhousing, travelling  
through Mission Beach and other  
lovely areas. Exotic fruits as well as  
orchids were on sale and in demand at  
one port at call. Much fun and laughs  
was had on the buses.

Sunday night the B.B.Q. and Plant  
Auction was held. The Auction suc-  
cessfully raised more than usual under  
the hammer of Bob Gourley. A lot of  
fun was had by all. At the close of this  
evening a very important announce-  
ment was made by Mr. Mick Keith.  
He announced that Mrs Jean Slattery  
was to be Honoured for her untiring  
work with Australian Floral Art and  
Community Services the next day, in  
the Queens Birthday Honours. This  
was received with much applause by  
all.

Monday morning saw many taking  
the cruise on Tekin III and the few  
remaining who had not yet left for  
home or other places enjoying the  
Farewell Morning Tea.

The success of the Tully Conference  
was due in no small way to the  
cooperation between the President  
Robyn Godbehere and her hard work-  
ing Secretary, Diana Miller, whom she  
recognized at the Dinner with a gift



presented for all her hard work. Robyn recognized her hard working committee who never stopped all weekend. To mention just one or some would not be fair but the ladies who sold tickets etc. were hard at it all weekend. Robyn also mentioned Innisfail Orchid Society, who came to their meeting and offered their help. This is what orchid growing is all about. All Orchid Society members should make the effort to attend these conferences they would not be disappointed.

The next T.Q.O.C. Conference is to be our Silver Jubilee (25th Conference) and this is to be held in Cairns over the Queens Birthday Weekend 1990. This should be worth attending as Cairns has been known for its successful orchid growers and Orchid Nurseries for many years. I can remember our annual holidays spent in Cairns every year some twenty to twenty-five years ago, while my husband added to his already growing collection.

Cairns is also a great Tourist destination and has a terrific weekend market, where *many orchids are sold*. See you there!

*Thelma Keith.*

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## BOOK REVIEW

***Dendrobium Orchids of Australia***  
Walter T. Upton.  
Publishers Houghton Mifflin (1989.)  
240pp, Hardback. RRP \$69.95

This magnificent volume covers all species and natural hybrids of the genus *Dendrobium* found within the Australian Continent, Islands and Territories.

The book covers classification of the genus placing each species into subgenus and section.

A full chapter is devoted to the discovery of each of the species giving originator of specific name, discoverer, location and year of discovery.

The main part of the text, in alpha-

betical order, a description of each species, flowering period, distribution, habitat, culture. Accompanying each of these is the species used in producing the many hybrids now being grown around the world. Each of the species is accompanied with beautiful line diagrams of which the author is a Past master. These are annotated with a date, the earliest being 1963. This book was 26 years in production.

A chapter is devoted to the history of hybridization in the genus *Dendrobium*. Covered are hybrids within section of the genus, between section in the genus, dominance of the different species of the hybrids used to produce them.

Pollination by natural agents is included where known and a comprehensive table of harvesting (for green pod culture) and dehiscence time is given. Seed flasking and growing from the flask is included in this chapter.

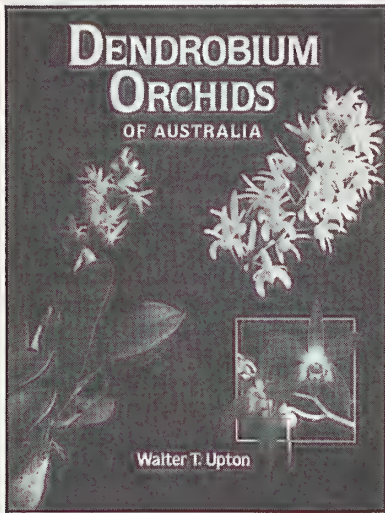
The culture of Tropical, Subtropical and Temperate to Cool-Temperate members of the genus is included indicating the best type of medium, pot, slab, garden beds, trees and rocks. Compost for pot culture is covered. Watering, feeding, resting periods and pest and diseases is comprehensively covered.

A number of Appendices cover flowering times, hybrids using only indigenous species, to February 1988, *D. phalaenopsis* and *D. schroederianum* hybrids, to March

1987, Reclassifying the genus, Authors of specific names and publications and a list of recent name changes.

Throughout the book are many beautiful colour plates depicting environments, species, hybrids and other features mentioned in the text.

This book, research and writing covering nearly 30 years will be invaluable to all orchid growers, orchid societies, botanists and libraries of all types now and for many years to come.



Back row: Ron Makin, Managing Director of Houghton Mifflin Australia. Front row: Graham and Sandra Ross, Jill and Wal Upton.

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## LETTERS

Dear Mr Wallace,

I put pen to paper after reading the article "Growing Orchids in the Top End" by Lyn Bates.

My family and I spent the 18 years prior to 1982 in PNG Rabaul and Goroka and my wife and I had little interest in gardening until the last couple of years when I collected on my travels in the highlands casually such things as *Dendrobium aenulas*, *Dendrobium oreochairs*, *Dendrobium uncinatum*, *Diplocaulobium Hydrophylm* and about Goroka *Calonthe triplicata* plus a large mainly white grass orchid which flowered beautifully and is probably a highland version of *Phaius tancarvilleae*.

In 1981 we went to Perth and became keen on Australian Orchids and Cymbidiums.

In 1987 I transferred to Wyndham. This is repeatedly the hottest (consistently) town in W.A. It is on the Cambridge Gulf but becomes very dry with an average of about 10mm of rain TOTAL for the months June, July and August. It also has an average of 24 days a year below 30°C maximum and from October to March above 40°C very regularly (about 40 to 50% of days). Night time temperatures in summer rarely go below 28°C and in winter rarely below 20°C. The usual weather is hot, dry and dusty with wind quite common.

We bought up *D. kingianums* and



Den Hybrid Jupiter-Malones. Three weeks straddling September/October, 1987.





*Phalaenopsis* 1987

crucified orchids from Perth. The former died and the latter grow but do not flower.

We bought up two cattleyas and they have both flowered; one twice and the other once.

Also *Den. Malones* (a soft cone) which flowered in 1987 but not last year. Also another soft cone *Dendrolium* which grows profusely but no flowers.

We bought up but lost the label of a *Vanda* with leaves like *V. denisonianna*. It did not flower in Perth (too young?) but has flowered 3 times in the last 9 months SINCE BEING PUT OUT OF THE SUN and in a shade shed of 70%-80% under a tree!

We have a shade shed to keep out the wogs particularly grasshoppers. We fertilize irregularly with weak Thrive and blood and bone. Since using the Thrive the photos show the result. The shade shed is watered for 10 mins 3 times a day; it is very crowded and humid.

People up here are amazed at the flowers. It is much more harsh a climate than Darwin but kept wet we seem to always have flowers.

We have also flowered one *Phalaenopsis* which the cat then killed but another is growing well. Also our *Den canaliculatum* goes very well and flowers regularly.

We have the Kimberly *Cymbidium* (*C. canaliculatum*?) growing but as yet no flowers.

The *Oncidiums* all died.

The point is that with little care and lots of water some orchids seem to grow well here in the heat.

The photos show that it is possible to continue with our hobby even in such extreme conditions.

Yours faithfully,  
Graham Bowden,  
PO Box 165,  
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The use of Acrylex 2000 T high-impact acrylic as the base material for Decorshade gives it a combination of excellent weathering properties, high strength, and resistance to damage from falling objects, ie stones or tree branches.

Another advantage is the material's excellent reflective properties, which control the diffusion of internal artificial lighting, providing substantial power cost savings and avoiding the "black sky" effect created by clear or tinted glass and other materials.

The "forest effect" of dappled light with intermittent sunlight and shade which the material provides is ideal for nurseries. It allows a natural control of sunlight as the sun passes overhead — unlike the "cloudy day" effect created by materials such as shade cloth.

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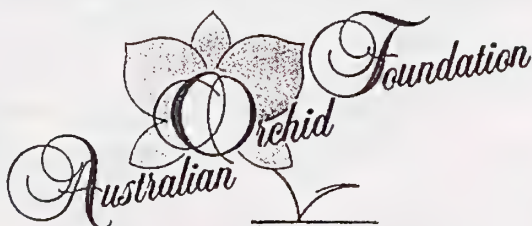
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- 1 Bud drop in hard cane Dendrobiums and other genera.
- 2 The period of time or age of the orchid flower when the stigmatic surface is most receptive for pollination.
- 3 The life cycle of the Dendrobium beetle, and its control, (*Stetbopachus formosa*).
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## VICTORIA

### Australasian Native Orchid Society

SPRING: Saturday 30th September 11 am-6 pm and Sunday 1st October 9 am-4 pm. National Herbarium, Birdwood Avenue, South Yarra. Melway Map 58, A.1.

### Bendigo Orchid Club Inc.

SPRING: Friday 13th October 10 am-8.30 pm. Saturday 14th October 10 am-6 pm. Sunday 15th October 10 am-4 pm.

### Geelong Orchid & Indoor Plant Club Inc.

SPRING: 30th September & 1st October, Saturday 1 pm-9 pm, Sunday 10 am-5 pm. Centenary Hall Cox Road, Norlane.

### Melbourne Eastern Orchid Society Inc.

SPRING: World of Orchids. 5th-8th October, Thursday, Friday, Saturday 9 am-9 pm, Sunday 10 am-5 pm. Mechanics Institute, Oakleigh.

### Orchid Species Society of Victoria

SPRING: Saturday 16th September and Sunday 17th September. Herbarium Hall, Birdwood Avenue, South Yarra.

### Mornington Peninsular Orchid Society Inc.

SPRING: Mornington Peninsular Orchid Society Inc. Show, Saturday 7th to Sunday 8th October. Saturday 9 am-6 pm and Sunday 10 am-5 pm. Frankston High School Assembly Hall, Tower Hill Road, Frankston.

## NSW & ACT

### Berowra Orchid Society

SPRING: Friday 15th September 12 noon-9 pm, Saturday 16th September 9 am-9 pm. Berowra Community Centre, Gully Road, Berowra NSW.

### Blue Mountains & District Orchid Society

SPRING: 9th September 12 noon-5 pm, 10th September 9 am-4 pm. The Melrose Hall, Emu Plains.

### Byron District Orchid Society Inc.

SPRING: 15th-16th September 9 am-5 pm. Mullumbimby United Church Hall.

### Campbelltown & District Orchid Society

SPRING: Thursday 7th September, Friday 8th September 9 am-9 pm and Saturday 9th September 9 am-3 pm. Macarthur Square, Campbelltown.

### Casino and District Orchid Society Inc.

SPRING: 22nd September 9 am-6 pm, 23rd September 9 am-4.30 pm. R.S.L. Hall, Canterbury Street, Casino 2470. Featuring THE CHAMPION ORCHID OF SUMMERLAND also Bromeliad Display. R.S.L. Hall, Canterbury Street, Casino.

### City of Lismore Orchid Society Inc.

SPRING: 7th September 9 am-7.30 pm, 8th September 9 am-6 pm, 9th September 9 am-7 pm, 10th September 9 am-3 pm. City of Lismore Orchid Society Inc., Ballina Street, Lismore.

### Cumberland Orchid Society

SPRING: 30th August 9 am-5 pm, 31st August 9 am-9 pm, 1st September 9 am-5 pm, 2nd September 9 am-4 pm. Castle Towers Shopping Centre.

### Great Lakes Orchid Society

SPRING: 30th September & 1st October 9 am-5 pm. Forster Primary School, Middle Street.

### Hawkesbury District Orchid Society

SPRING: Saturday 2nd September 12 noon-5.30 pm and Sunday 3rd September 9 am-5.30 pm. Senior Citizens Centre, Richmond.

### Illawarra District Orchid Society

SPRING: 31st August 9 am-9 pm, 1st September 9 am-5 pm, 2nd September 9 am-12 noon.

AUTUMN: 1st June 9 am-9 pm, 2nd June 9 am-5 pm, 3rd June 9 am-12 noon.

### Morisset & Lakes District Orchid Society

SPRING: Wednesday 23rd August, Thursday 24th August, Friday 25th August and Saturday 26th August. During shopping hours. Wyong Plaza.

### Mullumbimby Orchid Society

SPRING: Byron District Orchid Society Inc. 15 & 16th September. 9 am-5 pm. Mullumbimby United Church Hall.

### Nambucca Valley Orchid Society

SPRING: 8th September 9 am-8 pm, 9th

September 9 am-4 pm. Nambucca Entertainment Centre, Ridge St, Nambucca Heads.

### North Shore Orchid Society

SPRING: 28th-30th August 9 am-5 pm, 31st August 9 am-9 pm, 1st September 9 am-6 pm, 2nd September 9 am-4 pm. Lemon Grove Shopping Centre, Victoria Avenue, Chatswood.

### Northern Rivers Orchid Species Society

SPRING: 26th & 27th October 9 am-9 pm, 28th October 9 am-12 noon. Species show and hybrids. Lismore Shopping Square.

### Orchid Society of Canberra

SPRING: 9th September 12 noon-5 pm, 10th September 9 am-4 pm. Phillip College, Launceston Street, Phillip, ACT.

### Panania-East Hills (R.S.L.) Orchid Society

SPRING: 9th September 10.30 am-4.30 pm. Panania Senior Citizen's Centre, Cnr Anderson Avenue & Pepper Street, Panania.

### Southern Riverina Orchid Society

SPRING: Saturday 8 am to 5 pm, Sunday 9 am to 5 pm. Dates and venue to be advised.

### Sutherland Shire Orchid Society

SPRING: Saturday 16th September-Sunday 24th September 9 am-5 pm. Catts Nursery, 80 Port Hacking Road, Sylvania.

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## SHOWDATES

### The Australasian Native Orchid Society — Warringah Group

SPRING: Friday 8th September 12 noon-10 pm, Saturday 9th September 9 am-8 pm, Sunday 10th September 9 am-4 pm.  
Mona Vale Memorial Hall, Pittwater Road, Mona Vale.

## QUEENSLAND

### Maroochydore Orchid Society

SPRING: Thursday 3rd August, Friday 4th August 8.30 am-5 pm. Saturday 5th August 8.30 am-2.30 pm. Maroochydore Shopping Centre. Maroochydore Orchid Display, 5th, 6th & 7th October. Maroochydore Shopping Centre.

### Tropical Queensland Orchid Council

Meetings held in Townsville in March and November, Conference held in June (Queen's Birthday Weekend) Host Society 1989 — TULLY.

### Wynnum Manly District Orchid Society Inc.

SPRING: Saturday, 29th September and Sunday 1st October, R.S.L. Hall, Melville Terrace, Manly Qld.

## WESTERN AUSTRALIA

### Albany Orchid Society

SPRING: 21st-23rd September (venue not known).

### Augusta and Districts Orchid Society

SPRING: 15th-16th September, CWA Hall, Augusta.

### Bunbury Orchid Society

SPRING: 27th-30th September (venue to be advised).

### Esperance Orchid Society

SPRING: 6th September (venue not known).

### Geraldton Orchid Society

No shows planned 1989.

## TASMANIA

### Burnie Orchid Society

SPRING: Friday 13th October 1 pm-9 pm. Saturday 14th October 9 am-9 pm. Sunday 15th October 9 am-5 pm. Burnie Civic Centre.

### Launceston Orchid Society Inc.

SPRING: 6th October 2 pm-9pm, 7th October 9.30 am-9 pm, 8th October 9.30 am-6 pm. 1989 spring show coincides with our 11th Tasmanian Conference. The Launceston Orchid Society are hosts.

### Litchfield Orchid Club

SPRING: Palmerston Orchid Display. Date to be set possibly Oct '89.

## SOUTH AUSTRALIA

### Port Augusta Orchid Club

SPRING: Friday 22nd September 12 noon-7 pm. Saturday 23rd September 9 am-7 pm. Sunday 24th September 9 am-2 pm. Coinda Hall.

### Melville Districts Orchid Society

SPRING: 2nd-3rd September, Roy Edinger Hall, Melville.

### Mandurah Orchid Club

SPRING: 16th-17th September. Aquatic Centre, Mandurah.

DISPLAY ONLY: 2nd-5th August. KMart Shopping Centre, Mandurah.

### Northern Districts Orchid Society

SPRING: (To be advised).

### Orchid Society of Western Australia

SPRING: 13th-16th September. Metro Maddington Shopping Centre, Maddington.

### South Eastern Orchid Society of W.A.

SPRING: 26th-27th August. Kelmscott Agricultural Hall, Kelmscott.

### Wanneroo Districts Orchid Society

SPRING: 7th-9th September. Whitfords Shopping Centre, Whitfords.

DISPLAY ONLY: 24th-25th June. Lesser Hall, Wanneroo Shire Offices, Wanneroo.



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# Orchid

Review

Volume 54 – No. 5

OCTOBER, 1989





# YORK'S DISAPPEARING ASIAN SPECIES

Those spectacular 'Indian' Dendrobiums! Jewel-like Ascocentrums! Great Vanda and Paph. species! Importing them is just about impossible now. York still has big flowering-size plants of them — but when these are gone, they're gone!



## THE VANISHING ASIAN DENDROBiums; COLLECT THEM WHILE YOU MAY!

- Den. thyrsiflorum:** Thailand. Photographed. Lush, pendulous flower heads in white with gold lip. Fine plants ..... C. \$18  
**Den. parishii:** Burma, Thailand. Rose-purple flowers about 5 cms across, with downy lip on those unusual nobbly bulbs ..... I. \$18  
**Den. farmeri:** Thailand, India. Flower heads like bunches of grapes. Flowers white to pink with yellow lip ..... I. \$18  
**Den. formosum var giganteum:** Thailand. Snow-white flowers up to 4" or 5" across with showy yellow on lip. Summer ..... I. \$18  
**Den. aggregatum:** Thailand. Chunky bulbs, brilliant gold, round, perfumed flowers on fine-stemmed racemes. Good-size plants. .... I. \$18  
**Den. brymerianum:** Big golden flowers. The orange lip has an incredible fimbriated "beard". One of the rarely-seen dens ..... I. \$18  
**Den. findlayanum:** Thailand. Unusual form. White to lilac, flushed with purple and a gold-throated lip ..... C. \$18  
**Den. sutepense:** Thailand. Showy white flowers on slim upright stems. Something unusual. Cool growing ..... I. \$18

## LYCASTES EX PERU AND HONDURAS

**Lycaste aromatica:** the perfumed, waxy gold flowers (about 2½") make their show when the deciduous leaves have fallen! Easy to grow. .... C. \$25

**Lycaste xtyriophora:** Peru. Unusual yellow-green flowers mottled with brown. Rare species ..... C-1. \$35

**Grobya amherstiae:** Brazil. Elegant rarity related to *Cyrtopodium*. Up to ten greenish-translucent flowers with purple spots on 15cm sprays. It will open a few eyes when you take it to a meeting! ..... H. \$35

**Stenocoryne vitellina:** Brazil. Dark, flat, brown-green bulbs throw slender inflorescences of brown-yellow flowers, usually flushed with red and with purple in throat. Related to *Bifrenaria*. .... \$30

**Cattleya luteola:** Compact gem from Peru. Two to six delightful lemon yellow flowers, usually with perfume. A charming miniature; needs warmth ..... \$35

## — AND PROMENAEAS!

**Promenaea stapelioides:** Brazil. Two inch flowers, green/yellow with lurid purple on a compact, easy-to-grow plant. Something different ..... I-H. \$24

**Promenaea xanthina:** Brazil. Similar to above but the long-lasting flowers are citron-yellow with red dots on the lip. Flowers in Summer. .... I-H. \$24

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**Rhynchostylis retusa:** Thailand. Handsome and unusual leathery leaves and great white roots! Long pendulous foxtails of waxy flowers about ¾" across. White with purple spots and a solid purple lip. Flowers Summer to Autumn. Warm ..... \$25

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**Paph. hirsutissimum:** India. Dramatic 4" purple/green flowers on a stem covered in dark purple hairs. Large helmet-shaped, green/brown lip. Cool grower. \$20. Some larger plants at ..... \$25

**AMERICAN FIR BARK.** York regrets that current stocks are completely sold out. A new shipment is on its way but the bad news is, it's going to be dearer. Still, there's nothing in the world to beat it; more details in next A.O.R.

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### Cover:

#### *Paphiopedilum henryanum*

This species shows the dilemma that faces those wishing to implement laws to protect wild species. While private collectors were instrumental for its discovery, they were also responsible for its overcollection, threatening the species very in situ existence. However, while this may be the case, enough plants have now reached private institutions. These will ensure its continued ex situ survival. Hundreds of plants are already growing in flask in our laboratory. To safeguard against habitat destruction, wild collected plants must be allowed to trickle through to concerned individuals. See Conservation Minded . . . or Narrow Minded article on p.4.





***Paphiopedilum delenatii***

Discovered in 1913 in the area of Tonkin, Vietnam, *Paphiopedilum delenatii* owes its very existence to the fine work undertaken by the private firm of Vacherot and Lecoufle of France. It is reported that only two plants were ever discovered, one of which died at Kew Gardens. The only remaining plant was procured by the aforementioned firm, who propagated hundreds of plants for the world market. Where would this species be today if the fate of the species had been left in the hands of the bureaucrats and Botanical institutions.



***Paphiopedilum druryi***

Much has been written about the overcollection of this species, with little comment being given about the other major factor which has seen the natural populations being decimated. The indigenous population has been so hungry for timber products that most of the area has now been cleared. The remnants that still remain on the Travancore Hills in Southern India cling to the very edge of survival. The micro climate has been so altered that the natural populations of *Paphiopedilum druryi* are slowly declining to dangerous levels. Now on appendix 1, trade in the species is totally restricted. Thankfully, there are reasonable numbers in artificial cultivation.

As the forests fall, governments, botanists and some concerned individuals are exploring better ways in which to implement some form of legislation which will work effectively in conserving threatened species. Unfortunately, so far, little input has been asked of private individuals, resulting in signs that would tend to indicate that a form of 'blanket legislation' will be implemented. This will have adverse affects on the entire conservation movement particularly on those that have been instrumental in mass production of plants by tissue culture and seed. This article will deal with the problems confronted by our establishment which is concerned with the preservation of the Cypripedioideae.

CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora entered into force on July 1 1975 and now has

## Conservation ... or Narrow

Text: R.D. Kramer

more than 100 member countries. These countries act by banning commercial trade in an agreed list of currently endangered species and by regulating and monitoring trade in others that may be endangered. Many species are declining in numbers because of loss of habitat and the increased exploitation of natural resources as human populations grow. The trade in rare orchid species is a highly lucrative business and includes a wide variety of species. The most endangered species are listed on appendix one., these are species which are currently threatened with extinction. So as not to endanger them further, no permits are issued for international trade in these species unless there are exceptional circumstances. Countries can, if they wish, impose stricter controls. Appendix 2 species are those next most threatened. Trade continues with these species but is carefully monitored.

The CITES Convention was never designed to ban all trade in wildlife products but to ensure that trade does not contribute to the possible extinction of species, flora & fauna.



The problems associated with restrictive legislation is that it inhibits those that are connected with valuable research and conservation work. In order for us to be able to propagate species *Paphiopedilum* and *Phragmipediums* in artificial cultivation, we need to be able to import either seed or plants. The latter is at times more appropriate as most of the governmental institutions we have dealt with show limited knowledge of how to properly look after the seed. If seed is not stored properly its viability is dramatically reduced. To be able to obtain seed of some of the rarer species from these institutions is almost impossible. This can be said of even the largest institutions and Botanical Gardens. The second problem of seed is one of acquisition. Botanical institutions are at times loathe to deal with the public, so by the time one has passed all their security clearances and

market at reasonable prices. A flowering plant can be obtained for US\$300 (which has had about 6-7 yrs growing). Even my small establishment has already released some 9,000 plants in flask with a further 3,000 being grown on for those that have difficulty in deflasking. The question must be asked; Where would these projects be if initially the people concerned would have been restricted from importing the parent stock?

The question asked should not be one of total cessation of trade but one of proper management of the threatened species.

While the legislation may be well intentioned, flaws will always be in evidence. An example of this is the original conservation project carried out by Kew Gardens and Edinburgh, dealing with the species *Paphiopedilum sandermanum*. Several plants were collected in the late seventies, one of which went to the aforementioned botanic Gardens. Hoping to save the species in its natural habitat, the plant was pollinated and seed sent to several flasks in the United States. At this point greed seemed to have taken over from the original conservation effort and seedlings appeared on the market at ludicrous prices. In Australia 4" seedlings were sold A\$150, far outside the reach of most growers. When plants collected from the wild appeared on the market for US\$300 they were naturally preferred. This then posed the third major problem; to whom do you entrust very rare and endangered species. There are those unfortunately, who jump on the conservation wagon so long as there are high financial rewards at the end of the road.

The horticultural world is moving into an era where closet conservationists are each vying for a place of recognition for some aspect of unacclaimed conservation work. When the glory and self gratification is over, very few nurseries and private institutions continue to show the zeal they did initially unless there are financial or personal rewards to be had.

The simplistic and unrealistic viewpoint is that if all trade ceases, the plants would be safe and protected. Reality has shown us that the wood products of the poorer developing countries has led them to devastate large tracts of woodland to the point where not only are the flora and fauna severely threatened, but also the indigenous peoples very existence.

If a cessationist type of legislation was to be eventually implemented the stark realities of the impact on the survival of a certain species would



*Paphiopedilum sandermanum*

In the early 1980's, this horticulturally rare plant was re-introduced into cultivation. For approximately 10 years no substantial propagating successes have been achieved. The Kew, Edinburgh plant was pollinated in 1983 and seed sent to private flasks in the USA. Unfortunately this was not publicised and unscrupulous collectors continued to search for the plant until in 1987 large numbers of plants were removed from its National Park habitat and shipped to Japan, USA and Germany. The seedlings of the initial Kew plant were finally released in Australia in 1988 for a staggering A\$150, per 2" growth. While ridiculous prices like this are being asked for, wild collected plants will find ready buyers. This well intentioned conservation project by Kew Gardens was unfortunately a dismal failure.

soon be felt. An example of this is illustrated by the following example. Any new species that is discovered after the legislation is put into force, would be impossible to import legally, therefore restricting almost totally the work which could be carried out by individuals who do not have government backing. Prohibition has not been effective anywhere in the world and if a categorical safeguard on the species habitat cannot be given, then restrictive legislation should be given 'the thumbs down'.

By creating an environment where species prices are likely to soar to record highs, the authorities are sealing the fate of the worlds flora and fauna. This will create an environment for the 'undesirables' to thrive, (ie) those where no moral boundaries

# Minded ... Minded?

Photography: Salvador Costelo

'hoohah', another football field size of jungle has been cleared.

Several of the worlds well known botanists have stated that all trade in the Paphopedilums and Phragmapians should be halted, with the major conservation work being carried out by the well established Botanic Gardens. I honestly question whether they have put any thought into the problems associated with conservation issues. As has been mentioned, botanical institutions have a rather poor record concerning the preservation of species by propagation and the best documented cases of conservation have all been achieved by private institutions or collections. The greatest achievement documented was that of Vacherot and Lecoufle connected with the saving of *Paphiopedilum delenatii*. If the work had been left to the botanical institutions the plant could well be extinct. Another example of ex situ conservation was carried out by Tonkins Orchids who propagated and grew thousands of *Paphiopedilum rothschildianum* (many now flowering size), and released them on the world





*Paphiopedilum rothschildianum* in situ

The now threatened *Paphiopedilum rothschildianum* shown growing in high light amongst sedgy grasses and sprouted on the roots of a large Casuarina tree. Although thousands of seedlings are produced annually world-wide, unscrupulous orchid vandals are still plundering its National Park habitat. In fact, the only known habitat of the species. Any wild collected plants offered for sale have been illegally collected. This photograph supplied by Mark Clements, Royal Botanic Gardens, Canberra.

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exist merely those of money and aquisition.

By restricting us to import any species (old and new finds currently not in the collection), I would be limited to the species on hand, which could be flasked and distributed. This would place further pressure on natural populations.

I am indebted to the Los Angeles Arboretum for their continued support with our world wide project in *Cypripedioideae* conservation. While most of the other Botanical institutions gave us the flick, this Garden continued to support us. This would not have been possible if not for their grower, Earl Ross. From seed sent by them I have produced 12,000 *Paphiopedilum rothschildianum* seedlings in flask, many of which were sent to private individuals and Botanic Gardens around the world. Another institution which has been of help has been Kew Gardens although much work has yet to be done by them in the proper seed storage to retain a higher percentage of viability.

Recently a spate of rather emotive articles appeared in Australian newspapers concerning the prosecution of a well publicised orchid collector. Unfortunately the articles, tended to lack fact, again I believe a ploy by the writers and those who provided the 'emotive drivell', to sensationalize the issue at hand. Both parties have caused more damage to the conservation effort than I think they realize. The message I have for these people is 'hands off' unless you know what you are talking about, then please get the facts straight. Why for instance wasn't the fact mentioned that thousands of orchids were burnt in Queensland after a land clearing project while collectors who wanted to save the dessicated orchids (still in some cases clinging to their original hosts), were refused entry and told if they collected them they would be prosecuted. The plants were then bulldozed into a heap and set alight. This is our Government departmental beauracracy going mad. I certainly wouldn't like the fate of the flora and fauna left to these institutions. Many similar examples are repeated world wide.

### Possible solutions

As has been stated earlier the general thinking should be towards the management of the worlds species rather than the cessationist policies put forward by the 'greenie' bureaucrats.

Some possible measures that should be undertaken may be along the following lines.

1. The capitalist conservationists must be deterred, by flooding the





market with good quality seedling at affordable prices. The term rare and 'pricy' must be stamped out.

2. Establishments that have proven their conservation policies should be able to obtain a special licence allowing them to obtain genetic material for propagation (ie plants — seeds) monitored closely by government instrumentalities. Any breaches of this privilege would render them exempt from any further licence applications.

3. While ex situ conservation is a temporary bandage, the governments and conservationists should be pushing for habitat preservation. What is the point conserving something artificially when at the end of the road the species have no habitat left to return to.

4. Those that have tried to compete on the open market with seedlings have found it very difficult to compete. Some species are collected in such vast quantities that flowering sized plants can be purchased for only a few dollars. Once the trade in imports is decreased more laboratories I feel will artificially propagate plants.

5. Frustration has been aired by growers with the quarantine departments over the damage caused by them on rare imported stock. The fumigation techniques are I believe

#### Artificially propagated plant *Paphiopedilum rothschildianum*

The reason for the continued plundering can only be due to the disgusting greed of the collectors and their co-conspirators, who have shown to have little regard for the well being of the species, the magic dollar their only moral yardstick. The plant shown is an artificially propagated plant six years from seed. Not having been collected from the wild has not diminished its overall beauty or appeal of the species in any way in fact, the plants both flower and grow much faster than their collected counterparts. The flower is 25 cm in overall spread.

outdated and too severe. Plants with succulent type foliage don't stand a chance. How can we talk about conservation when we have Government departments killing plants by the hundreds every year. The Methyl Bromide spraying or fumigation is so strong that plants return from these departments in a very poor condition.

6. A public re-education programme is needed making growers aware that their actions are seriously affecting the well being of orchids in the wild. Only by these means can we hope for a future in conserving our world orchid heritage.

#### In conclusion

Mankind now is fighting for his very survival after decades of mismanagement of the environment. Children of the future face the bleak reality of only experiencing the joys of the worlds flora and fauna through books, posters and films, without ever having seen them in real life. Greed and personal gain have been at the forefront of our downfall and if mankind doesn't act soon, very little will be left

to protect. Our heritage must be safeguarded and this is the very reason that sound and protective legislation must be enforced, not one which is restrictive and emotive nonsense. ■

*Wilton Paphiopedilum  
Research Collection*

#### APPENDIX I

So *Paphiopedilum druryi* joins the nine orchid species (*Cattleya skinneri*, *Cattleya trianae*, *Didickea cunninghamii*, *Laelia jongheana*, *Laelia lobata*, *Lycaste virginalis*, *Peristeria elata*, *Renanthera imschooiltiana*, and *Vanda coerulea*) which already are listed on Appendix I of CITES.

#### APPENDIX II ALL ORCHIDS

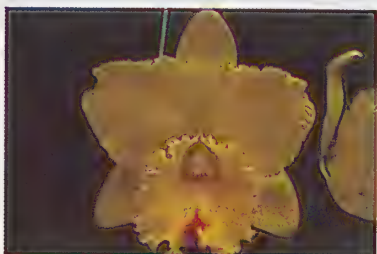
Apart from the 10 species listed above, all orchids have been included on Appendix II of CITES since its inception. Appendix II was designed to include "all species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival."



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SM276	Blc. Chinese Beauty "Miss Universe"	US\$ 80
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# Glomerella Leaf-Blight in Cymbidiums

## Introduction

This disease, also referred to as anthracnose, is caused by *Glomerella cingulata*, also known as *Colletotrichum gloeosporioides*. It produces severe problems for growers of *Cymbidiums* in New South Wales and Queensland. In a normal season, there will be only minimal damage to leaf tips; but in a wet autumn, the entire leaf and even the pseudo-bulb can be killed. Many commercial growers have had considerable losses in the last two years, and some smaller growers lost most of their plants. It is necessary then, to have a means of controlling the disease, before there can be any security in the growing of *Cymbidiums*.

## Susceptible crops and orchid genera

*Glomerella cingulata* infects most garden ornamentals, and also causes economic losses to sub-tropical and tropical crops such as avocado, coffee, cotton, mango, tea and Townsville lucerne (2, 3, 7, 8, 11). In the present study, Orchidaceae affected include *Brassia*, *Cattleya*, *Coelogyne*, *Cymbidium*, *Cypripedium*, *Dendrobium*, *Epidendrum*, *Laelia*, *Lycaste*, *Masdevallia*, *Miltonia*, *Miltoniopsis*, *Odontoglossum*, *Odontioda*, *Paphiopedilum*, *Phaius*, *Phalaenopsis*, and *Stanhopea*.

## *Glomerella* and climate

*Glomerella* causes the anthracnose in places which have a combination of prolonged wet periods and warm temperatures. The high humidity associated with the wet periods is necessary before the fungus can produce spores, for the spores to germinate, and then for the disease symptoms to be expressed. At moderate and low temperatures, the growth of the fungus is sharply reduced, and for this reason the disease is not a problem after the beginning of winter (Fig. 1).

In a normal season, infections of *Cymbidium* are limited to the leaf tips because these are particularly vulnerable sites for infection, for there are no structures which limit infection by *Glomerella* in contrast with other parts of a *Cymbidium* leaf.

Those requirements for prolonged wet periods with warm temperatures, mean that *Glomerella* is largely a problem of *Cymbidium* in places like

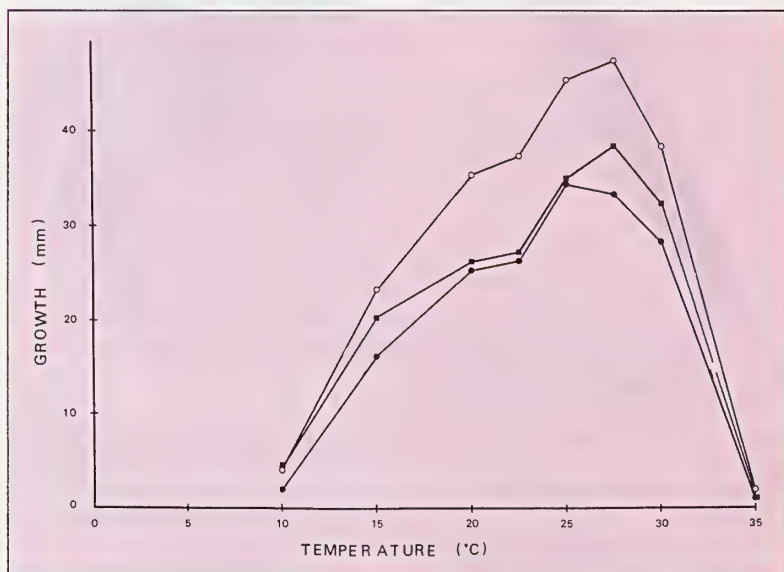


Fig. 1. Growth of *Glomerella cingulata* isolates at different temperatures, in 7 days.

the east coast of Australia, which have a warm-wet summer and autumn, and where plants are grown outdoors. Elsewhere, the disease has either not been recorded on *Cymbidium*, or has been recorded as causing only minor problems.

## Symptoms of infections.

In most seasons, damage will be

limited to death of tips of leaves, which does not spread (Fig. 2). However in other seasons, the initial symptoms are a soft rotting, anywhere on a leaf, which spreads in defined zones, down into the pseudo-bulb, so killing the plant (Fig. 3). Infections are followed 1-4 weeks later by the appearance of pin-point sized black spots

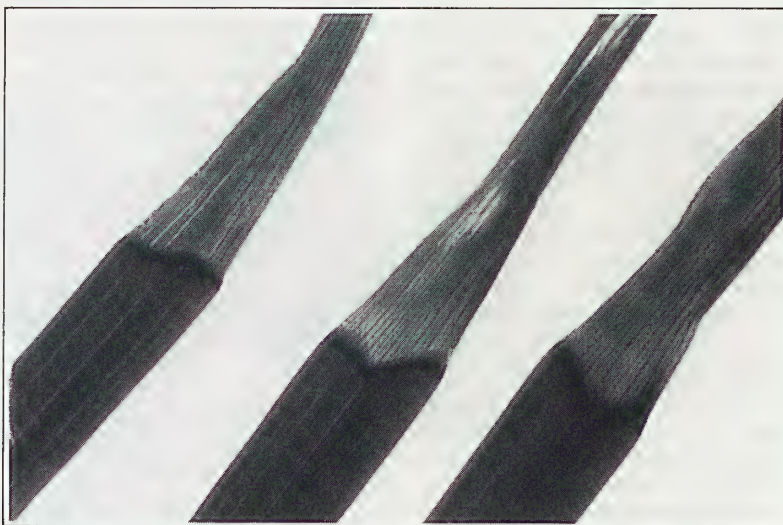


Fig. 2. Typical leaf tip infection caused by *Glomerella cingulata*, showing pin-point sized, spore-producing bodies (acervuli).



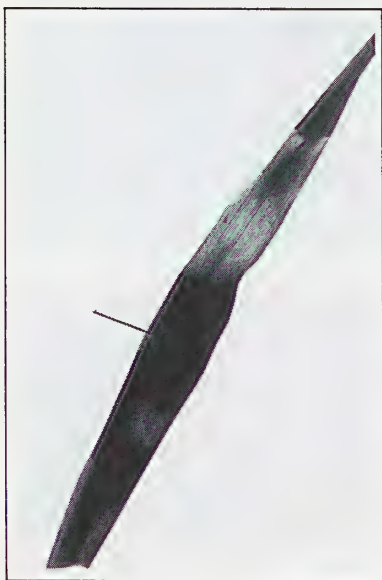


Fig. 3. (a) Severe infection with *Glomerella cingulata*. Note the 'island' of healthy tissue found in some locations.

(b) *Cymbidium* dying from a *Glomerella* infection.



which are reproductive structures (acervuli).

#### Disease cycle of *Glomerella* in *Cymbidium*.

The infections originate from spores (conidia). These develop from the acervuli, which are able to produce up to 17,000 spores per square centimeter. Spores will be produced successively whenever acervuli get wet, and then they will be splashed onto unsprayed leaves.

The infection cycle of *Glomerella* in *Cymbidium* appears to be related only to the conidial (asexual) stage of the fungus. This cycle is also a little unusual in that it involves two kinds of infection. That is, there is the ordinary parasitic infection in the growing leaves, and there is also the nonparasitic (saprophytic) infection of the dead bases of older leaves (Fig. 4).

Both infections produce new crops of conidial spores, but most are produced by the saprophytic phase, because the majority of the acervuli are on the dead leaf bases. Infections develop in leaves immediately after infection, but most infections are latent.

#### Latent infection.

In several other crops, *Glomerella* can infect 5-20 cells, but remain restricted to this limited area by inhibitors, i.e. it is latent, until some factor removes the inhibition. The area of a latent infection is so small, that it cannot be detected without special microscopic techniques.

In the present study, the first indication that latent infection was present, was the occurrence of new infec-

tions in *Cymbidiums* which had been sprayed with chlorothalonil (Daconil), which was known to protect other species of plants from *Glomerella* infections.

Sampling for latent infection was done using unsprayed, apparently healthy, leaves of varieties known to be susceptible to *Glomerella*. Any dead tips of the leaves were cut off, and the next 25 cm was treated with 3 per cent sodium hypochlorite for 3 minutes to kill any surface contamination with *Glomerella* spores.

The leaf tissues were then cultured in water agar, to encourage the latent infections to develop. The results showed that 50 to 90 per cent of the leaves had latent infections of *Glomerella*. That is, under the most serious conditions for the development of the disease symptoms, up to

90 per cent of leaves could be affected, and produce disease symptoms. Obviously this situation does not occur naturally, even in 1988 and 1989 when the problem was severe, so that most latent infections never develop in the 30 months' life of a *Cymbidium* leaf.

Thus, one year's spraying should not eliminate the possibility of disease, if latent infections are present before spraying is begun.

#### Systemic fungicides.

On first consideration, the systemic fungicides, which penetrate into leaves, should have the potential to control *Glomerella* in *Cymbidium*. This was a very likely means of control, as some of these systemic fungicides are very effective on *Glomerella* infections of other crops (1, 4, 6, 9, 12).

Agar cultures of *Glomerella* were tested for susceptibility to a range of systemic fungicides. Complete suppression growth was obtained with flusilazol (Nustar®), propiconazole (Tilt®), propineb (Antracol®), triadimenol (Bayfidan®), triadimefon (Bayleton®). Good control was obtained with bitertanol (Baycor®), carbendazim (Bavistan®), myclobutanil (Sythane®), triforine (Saprol®), but procymidone (Sumisclex®), gave poor control. Thus many systemic fungicides had the potential to stop spread of existing *Glomerella* infections, and to kill the symptomless, latent ones. However, none of these chemicals was effective on leaves under either laboratory or field conditions.

Why should this be so? One possibility was that new strains of the fungus were resistant to the fungicides.

#### Strain differences

Strains of *Glomerella* with different virulence are known (3, 8), and it seemed possible that the outbreak in 1988 was caused by such a strain which was resistant to the several

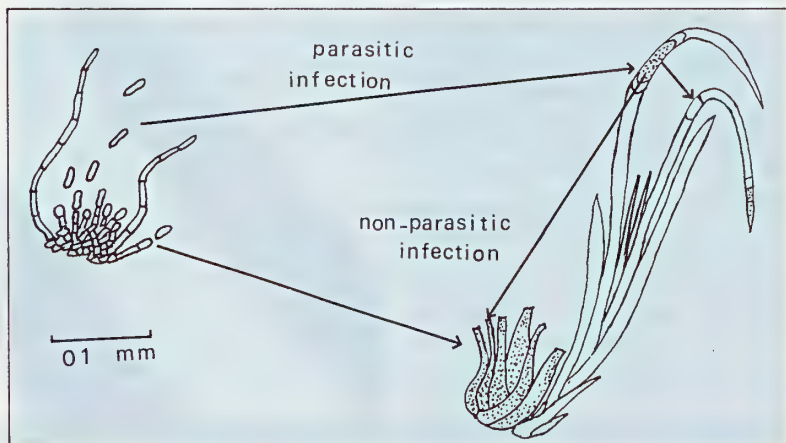


Fig. 4. Disease cycle of *Glomerella cingulata* in *Cymbidium* (asexual stage only).



fungicides being used. This aspect was tested by comparing two recent isolates, with an isolate obtained in 1974. In agar cultures, there was no difference in susceptibility of the isolates to the fungicides — flusilazol, prochloraz, propiconazole; propineb and triadimefon, indicating that difficulties in controlling the disease were not caused by new strains.

**Physical resistance to systemics**

Another possibility is that the systemic fungicides failed to penetrate the leaves. *Cymbidium* species, from which the modern hybrids have been derived, originated in the S.W. China-Himalya area, where there is a severe drought for 3-4 months. Under these conditions, *Cymbidium* spp. should have developed mechanisms to reduce water loss from the plants.

Studies of *Cymbidium* leaves shows that on the outside of the leaf there is a layer of cuticle, 5-8 microns thick, which prevents water getting out of the leaf. All of the next layer of cells on the upper side of the leaf and a third of the cells on the lower side of the leaf are very thick-walled fibre cells. These fibre cells produce the characteristic strength of the *Cymbidium* leaf, but they are also impervious to water. The net effect, is that the *Cymbidium* leaf is largely protected from water loss, so allowing the plants to survive drought conditions. This anatomical detail also explains why systemic fungicides are unable to penetrate *Cymbidium* leaves in sufficient quantity to be effective (Fig. 5). The physical restrictions on entry of water also apply to penetration of *Cymbidium*, which will be best able to penetrate through the

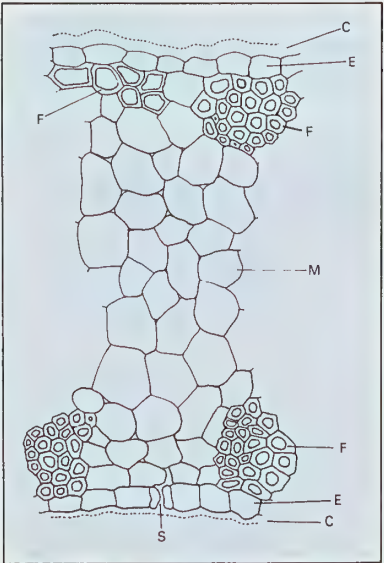


Fig. 5. Transverse section of *Cymbidium* leaf showing stomatal pore (s) through which water can pass, fibre bundles (F), epidermis (E), cuticle (C). (x 500).

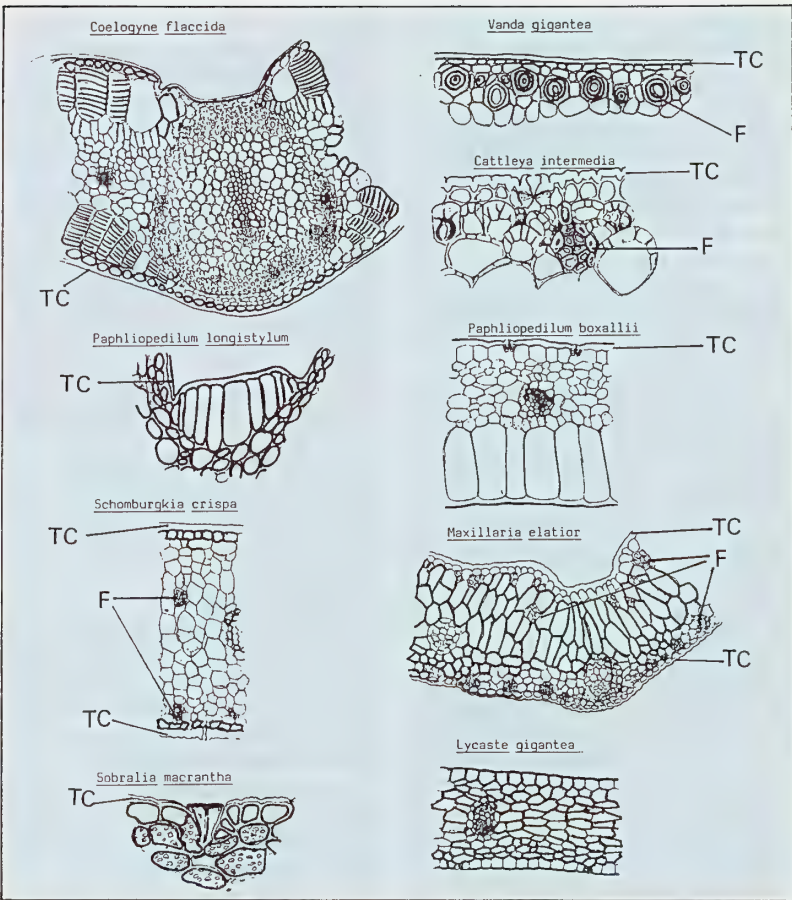


Fig. 6. Anatomy of some orchid leaves, showing variations including Thick Cuticle (T.C.) and Fibre Cells (F.).

stomatal pores on the lower sides of leaves, and the leaf-tips.

This anatomical condition should not be considered unusual, as most orchid genera studied by Mobius (1887) had thick cuticle, and *Cattleya*, *Coelogyne*, *Maxillaria* and *Vanda* also had specialised cells in the outer layers of the leaf, which would have given further protection from infection.

An additional route for infection is provided by the hydathodes at the leaf tips, which have no cells resistant to infection. Also there are nutrients in

the exudates (5) able to support growth of *Glomerella*.

**Protectant fungicides**

Control of the disease by protectant fungicides was a possibility, provided that the chemicals were applied before the latent infection occurred in the summer-autumn. For this work, benomyl (Benlate), Bordeaux mixture, chlorothalonil (Daconil), and prochloraz (Octave) was tested. Also phenylphenate (Natriphene) was used for its eradican properties and phosphorus acid (Fos ject), because it enhances natural resistance to some fungal infections.

These fungicides were applied from February 15 onwards at approximately 4 week intervals and records were taken on May 30th. There were eight replicates of each treatment and application rates are given in Table 2.

The results showed a marked degree of control by Bordeaux mixture and Daconil, less by Fos ject and less again by Benlate and Natriphene, as shown in Fig. 7, (on page 12), by four replicates of four treatments.

In practice, either Daconil, Fosjet or Bordeaux mixture will give control, and Daconil should be used if there is

Table 1.	
Average growth of 20 germinating spores in secretions from leaf tips, water and nutrient solution.	
Growing medium	Growth in 48 hr (microns)
Sterile water	78
Czapeck-Dox nutrient solution	184
Secretion ex 1714* leaves	107
Secretion ex B11-328* leaves	223
* <i>Cymbidium</i> clones	



the possibility of damaging flowers by Bordeaux mixture. Another form of chlorothalonil (Bravo), is:

- To prepare Bordeaux mixture, dissolve 10g of copper sulphate (blue-stone) in most of one litre of water, and make a slurry with 10g of calcium hydroxide (slaked lime) with the remainder. Stir a calcium hydroxide slurry into the copper sulphate solution, and add 0.5 ml of summer oil which improves the adhesive properties of Bordeaux Mixture, and incidentally controls some pests.

- 10 g is 2½ and 4½ level teaspoons respectively of copper sulphate and calcium hydroxide.

Bordeaux mixture is a general biocide, so it controls *all* the diseases of *Cymbidium* leaves, including those caused by the bacterial pathogen, *Pseudomonas* sp., so that normally no other fungicides or bactericides will have to be sprayed onto *Cymbidium* leaves. However, Bordeaux mixture does not control the root rot diseases caused by *Phytophthora*, *Pythium* or *Rhizoctonia*. If *Botrytis* causes problems on flowers, iprodione (Rovral®) will have to be used. Copper-oxychloride and similar related copper-based chemicals are not substitutes, as they cause damage to young ‘leads’, spikes etc.

Initially growers should remember that leaves sprayed with Daconil or Bordeaux mixture may already have

Table 2. Control of Glomerella by fungicide treatments measured as grammes of dry weight of healthy leaf per plant.			
Fungicide	Chemical	Rate per 10 litres	Dry weight and significance
Bordeaux mixture	Copper sulphate + calcium hydroxide	200 g	27.8 a
Daconil	chlorothalonil	15 g	27.1 a
Fos ject	phosphorous acid	60 ml	20.0 a b
Natriphene	phenylphenate	50 g	12.9 b
Octave	prochloraz	3 g	12.6 b
Benlate	benomyl	5 g	11.1 b
Control	—	—	0.3 c
* Significant differences at 1 per cent level.			

latent infections, so that complete control will not be obtained until the programme has been used for the life of the *Cymbidium* leaf, i.e. 30 months.

### Enviromental control

As indicated, severe occurrences of *Glomerella* in *Cymbidium* are related to warm and wet conditions, which allow greatest opportunity for production of the spores, at the time when the temperatures are most favourable to growth of the fungus (Fig. 1).

Therefore any management, which reduces the time that a leaf is wet will be an advantage. Obvious modifications to management are —

- (a) Protect plants from rain with glass or plastic, providing that this does not affect the 10°C difference between day and

night temperatures, required for flower initiation.

- (b) Allow good ventilation through the side of houses; if necessary using forced ventilation.
- (c) Give better spacing of plants, and only have one tier of them.
- (d) If diseased areas appear on a leaf, cut off the leaf-tip, if your collection is virus-free. However, tear off the entire leaf, if there is any doubt about the virus status of the plant.

### Resistance.

Most *Cymbidium* hybrids have been produced in Europe and the Atlantic Coast of North America, in climates where the freezing conditions in winter, mean that *Cymbidium* are kept in glasshouses protected from rain. These conditions allow the growing of varieties susceptible to *Glomerella*, and do not favour expression of any resistance to the fungus. This has the result that highly susceptible cultivars can be grown in that environment, and exported here.

Dr. Grunden has provided information on the resistance of a few clones



Fig 7 Control of blomerella

Table 3. Resistance rating of clones of <i>Cymbidium</i> spp. from 0 (very susceptible) to 10 (resistant).	
0	<i>C. devonianum</i> *
2	<i>C. eburneum</i> , <i>C. madidum</i>
3	<i>C. parishii</i> , <i>C. ensifolium</i> *
3-4	<i>C. sinense</i>
5	<i>C. insigne</i> *, <i>C. tracyanum</i> *
6	<i>C. lowianum</i>
7	<i>C. pumilum</i> *, <i>C. suave</i>
8	<i>C. bicolor</i>
9	<i>C. aloifolium</i> , <i>C. atropurpureum</i> , <i>C. caniculatum</i> , <i>C. dayanum</i> , <i>C. finlaysonianum</i>
* Species most commonly used in breeding.	



of *Cymbidium* spp. (Table 3). Among these clones, ones with resistance less than 4 cannot be grown without a major problem from *Glomerella*, even with regular fungicide application. Such clones are of doubtful value as parents in Australia, as are the highly susceptible cvs. Arminya, Fred Stewart, Royal Purple, Sensation-Melita and Spartan Queen. However, all resistant species have already been used as parents to a limited degree, so there is the potential for them to be used to provide a long-term answer to the problem. At the same time this would introduce such characteristics as flowering in sub-tropical climates and at different times.

#### Application of Control

With the present fungicidal control, the producers of *Cymbidium* plants will be able to grow cultivars which will be too susceptible to be grown by the amateur grower. This could lead to an undesirable situation where the plant purchased will not survive, and for this reason plant producers will need to use the following strategy —

- Avoid fungicides on seedlings during the first year in order to 'weed out' the highly susceptible plants.
- Clone only new cultivars that have moderate-high resistance *Glomerella*, as tested by an indexing method.
- Use chemical control on production lines.

#### Summary

This report gives basic details of the life-history of *Glomerella*, and one method for obtaining control of the disease. Further work needs to be done on the following aspects —

- Eradication of infection sources on leaf bases.
- Fine detail of the relation between climate and development of disease from latent infection.
- Inheritance of resistance to *Glomerella*.
- Strategy for control of *Glomerella* on *Dendrobium*, *Phalaenopsis* etc.

However, for the present, the better understanding of this disease will allow growing of *Cymbidiums*, without the risk of major losses.

#### Acknowledgements

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# Orchid Hybridising in particular *Lycaste*

**T**his particular genus, which originated in South America, was subsequently named *Lycaste* after the beautiful daughter of King Priam and Queen Hecuba of ancient Troy.

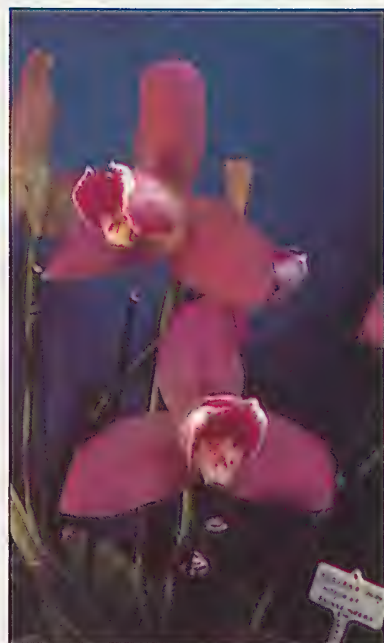
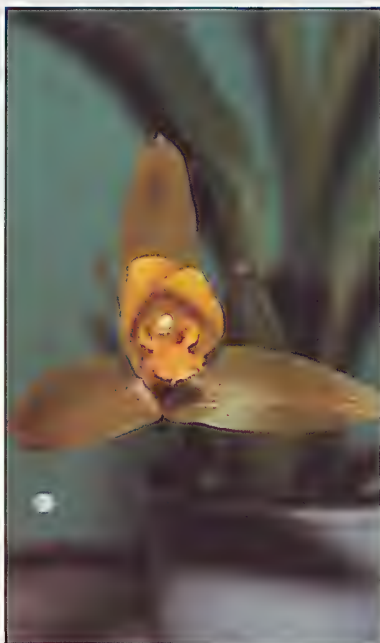
When George Ure-skinner was travelling through Guatemala he discovered one of the genus and was greatly impressed with its beauty — this was subsequently named after him and *Lyc skinneri* Alba became the National Flower of Guatemala.

As an orchid grower for 40 years and of that period 25 years hybridising mainly *Lycaste* and having made over 150 crosses of this genera, my experience may be of benefit to those who are interested in taking up this particular study. If I were to outline some of the basic principles in breeding and share the experience and the thrill of watching a new seedling unfold in all its glory and to finally win an award or championship, it would be a fitting reward for the years of planning and work undertaken.

I had the experience of being a stud breeder and Judge of animals. Hybridising orchids is similar in every respect to animal breeding; finding the dominant parent or parents is the first step and providing they have the qualities you are looking for you will surely get good results.

In the early 1960's Australians had very little knowledge or information on *Lycaste* hybridising and when the late John Ezzy flowered the first *Lyc Koolenas* (*Lyc Auburn Greycliffe* x *Lyc skinneri*) their beauty created a great impression on us. This cross was soon repeated by the late Leo Giles and registered by him as *Lyc Koolena* in 1967: then followed *Lyc Shoalhaven* (*Lyc Koolena* x *Lyc skinneri*) made by John Apperley; *Lyc Macama* (*Lyc Koolena* x *Lyc Sunrise*) made by myself, Fred Alcorn; the late Athol Bell made *Lyc John Ezzy* (*Lyc Shoalhaven* x *Lyc Koolena*) named after his good friend. Macama Orchids have registered over 30 *Lycaste* crosses.

**PARENTAGE** — During the late 1960's and early '70's saw the beginning of my search for dominant parents. I was fortunate in the early '70's to have two good *Lyc Koolenas*



Top left: Jason (*Macrobulbon* x *Lasioglossa*) (Both species) (Parent)  
Top right: Koolena May AMQ.O.S. (Parent). Above: Gyra Charm (Result).



*Lyc*-Koolena 'Macama' and *Lyc* Koolena 'May' HCC/AOC and two *Lyc* Macamas *Lyc* Macama 'Jocelyn' AM/AOC and *Lyc* Macama 'Doris May' HCC/AOC. The four had won championships and three awards and gave me the breeding stock to carry out line breeding and in turn enabled me to experiment with species in finding the most dominant parents. Unfortunately we lost *Lyc* Koolena 'Macama' by pollinating it before a new growth appeared. We have since proved this to be a fact and that it is wise to be patient and wait for the new growth to appear. Finding dominant parents is a long and slow process; it takes at least five years from pollination to flowering and it could take up to ten or more years to prove one has indeed found a dominant parent ... this process is an ongoing one to prove others in the line. During this period I returned to some species of primary hybrids to assist in finding my dominant parents and this enabled me to introduce new genes into my breeding pool.

After years of experimenting I favour the pod parent as the dominant factor in good breeding e.g. we used *Lyc* Koolena 'May' HCC/AOC, an orchid that has won 12 championships in NSW and Queensland plus an Award of Merit (QOS) crossed with *Lyc* Jason (macrobulbon x lasioglossa) (both species) making *Lyc* Gyra ... *Lyc* Jason has narrow straight sepals, brown/orange shade ... result was remarkable ... seedlings vary in colour, the best dark pink to red with blood red labellum ... these have won championships here and overseas.

The next cross was *Lyc* Macama 'Doris May' HCC/AOC x *Lyc* mathiasiae (species) named *Lyc* Wyuna ... all were pale green with pink flush, long strong stems, open petals, sepals free from furling.

*Lycaste* Aquila 'Gem', a seedling purchased from Wyld Court England



Top: Macama Doris May H.C.C./A.O.C. Above left: Wyuna Pale Beauty. Above right: Selfing Macama Doris May H.C.C./A.Q.C. Macama "Perfection".

... a pure yellow with weak texture and marked easily ... when crossed with *Lyc* xanthochiela, a sub species of *Lyc* macrophylla named *Lyc* Cooma ... a great change in texture ... colour yellow with fine brown spots, open petals and no furling in sepals ... flowers twice a year ... heavy texture ... lasts 6-8 weeks.

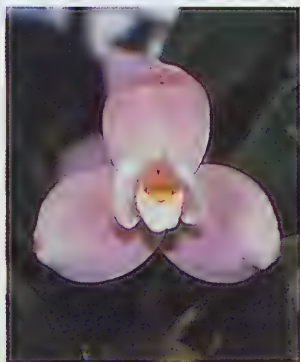
We have used the following with satisfactory results:

*Lyc* aromatica x *Lyc* Shoalhaven

(*Lyc* Benalla) *Lyc* macrophylla x *Lyc* Auburn (*Lyc* Dural) *Lyc* lanipes x *Lyc* Macama (*Lyc* Kembla) *Lyc* Macama x *Lyc* dowiana (*Lyc* Killara) *Lyc* Macama x *Lyc* cruenta (*Lyc* Carmel) *Lyc* skinneri x *Lyc* Aquila (*Lyc* Milperra) *Lyc* Macama x *Lyc* skinneri (*Lyc* Wyong)

Crosses made with first cross species — *Lyc* Leo, *Lyc* Shoalhaven, *Lyc* Nebula, *Lyc* Candicrue, *Lyc* Always, and noted the change in the texture and substance of the seedlings when using species and that they breed freely ... we assume most of the species must be tetraploids!

Another interesting experiment was the selfing of *Lyc* Macama 'Jocelyn' AM/AOC and surprised at the variation in colour and shape ... many shades of pink to dark reds ... sepals generally free of furling and not as wide as *Lyc* Macama 'Jocelyn'. Perhaps it was a return to some species! We tried *Lyc* Macama 'Doris May' HCC/AOC ... colour off white with touch of pink ... this orchid gained Reserve Grand Champion of the 7th Australian Conference Show, held Brisbane 1982 ... so far the result is very good ... many near white with



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pink flush ... sepals wide. Does this prove it is a dominant parent? I believe it does! It has proved so in line breeding and with species especially in light shades.

A further observation has been the success of the *Lyc* Macama cross *Lyc* Koolena x *Lyc* Sunrise ... have flowered them with three different *Lyc* Koolenas with *Lyc* Sunrise ... all good with *Lyc* Koolena 'May' HCC/AOC ... obtained the Award of Quality, i.e. 12 seedlings from the same pod. Obviously *Lyc* Sunrise is compatible with the various *Lyc* Koolenas.

If you make say a *Lyc* Koolena or *Lyc* Macama cross, it does not follow they will be successful but you should have one of the main dominant parents. Several years ago I made the *Lyc* Wyong cross *Lyc* Macama 'Jocelyn' AM/AOC x *Lyc* skinneri ... it was a failure ... many different colours of poor quality ... threw most away!

Recently made the cross with *Lyc* Macama 'Doris May' HCC/AOC x *Lyc* skinneri Alba 'Snow Flakes' ... many beautiful orchids of good quality ... *Lyc* Macama 'Doris May' with a good skinneri made a big difference!

#### INTERGENETIC HYBRIDISING.

The development of the *Angulocaste* (*Anguloa* x *Lycaste*) has made slow progress in Australia. Firstly, the large bulbs and leaves, secondly most of the flowers remained cupped. Have flowered *Lyc* Koolena x *Anguloycaste* Gweneth (*A* Olympus x *Lyc* skinneri) ... colour like *Lyc* skinneri ... heavy texture and substance ... flowers slightly cupped. Another cross to flower soon, *Lyc* Koolena x *A* Oakdon (*Anguloa ruckeri* x *Libra*) ... hoping for better result!

#### LYCASTERIA.

*Lyc* Koolena x *Bifrenaria* harrissonia ... hoping to flower some this year ... previous crosses hard to flower.

#### MAXILLACASTE.

One of the rewards last year was the flowering of a *Maxillacaste* *Lyc* (Koolena x *Maxillaria grandiflora*) ... very few seed from the pod and a number did not grow well ... early September 1988 we were thrilled to see a spike appear and we watched with great anticipation as the bud slowly unfolded ... overnight it burst fully open ... an amazing gem! Colour orange/pink shade ... petals open with a yellow labellum. This is only the third one registered. The pollen has already been used and we look forward to the next generation!

#### LYCASTE CROSSES OF DISTINCTION.

*Lyc* MACAMA — Koolena x Sun-

set

Koolena 'May' HCC/AOC x Sunrise 'Ena'

This cross has won many championships and awards including "Award of Quality" (12 seedlings from one seed pod).

*Lyc* KIAMA — Koolena x Macama

We are now able, with careful parental selection, to flower a few whites to light pinks and by another selection, mid pinks to light reds.

*Lyc* SUNSET — John Ezzy x Koolena 'May' HCC/AOC

Many beautiful reds to dark reds.

*Lyc* WYONG — Macama x 'Doris May' HCC/AOC skinneri Alba 'Snow Flakes'

'Doris May' HCC/AOC — off whites to soft pinks ... many of quality.

*Lyc* KARINA — Shoalhaven x Macama

Using Shoalhaven 'Doris' x Macama 'Doris May' HCC/AOC ... many in light shades of pink ... of quality.

#### OUR APPRECIATION.

One would be remiss if one did not mention the overseas growers for their contribution.

The Queen of *Lycaste skinneri* has been developed by Paul Gripp and Marie and James Riopelle of the USA to a high standard of perfection together with other *Lycaste* crosses.

Wild Court, England, have also contributed, over the years, to many fine crosses especially the beautiful *Lyc* Wildfires. We are indebted to them for their contribution.

#### SUMMARY.

We look to the future with confidence in our endeavour to improve the *Lycaste* and will strive to improve the ever popular greens and yellows ... several crosses are on the way.

Referring again to the 'open petal type' such as *Lyc* Aquila, *Lyc* Wyuna and *Lyc* Cooma, to mention a few, many of the species are of the 'open petal type', they are part of the family and have their appeal ... many have sepals that do not furl ... recently one of our Wyunas gained a Championship against the Koolenas and Macamas.

We are also concentrating on broadening the sepals and eliminating the furling.

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# Fusarium wilt in Cymbidiums

## Introduction

In terms of world agriculture, the species of *Fusarium* cause more damage than any other fungus, as they are responsible for major problems in bananas, beans, bulb crops, carnations, cereals, cotton, date palms, lawns, peas, potatoes, pine plantations and tomatoes.

*Fusarium* species damage plants in one of two ways —

1. Infections destroy the outside tissues of roots, so reducing the uptake of water and inducing a wilting, or near-wilting of the plant.

2. Some infections on the outsides of roots may spread to within the root and stem, where they can affect the system that transports water and nutrients to the leaves. By blocking this system, the fungus also induces wilting, and can also produce a yellowing of leaves from toxic materials produced by the fungus.

## Previous Studies of Fusarium Infection in Orchids

The first report of *F. oxysporum* in *Cattleya* showed that this fungus caused a wilt and root decay (4). The species, *F. oxysporum* occurs in a number of different forms (f.sp.), each of which can infect one or a few closely related genera. Thus *F. oxysporum* f.sp. *dianthi* infects only carnations, f.sp. *gladioli* only gladioli etc. In the US, *F. oxysporum* f.sp. *cattleyae* has been recorded affecting most orchid genera (1) and *F. oxysporum* f.sp. *vanillae* produces a similar disease on *Vanilla planifolia* in Puerto Rico (2). In New Zealand *F. moniliforme* causes problems on *Cymbidium* (3), but elsewhere the disease appears to be unimportant or it has not been studied in any detail.

## Symptoms of Fusarium Wilt in Orchids

With the control of *Pythium* and *Phytophthora* root rots by some of the newer fungicides, and of *Glomerella* by other fungicides, the residual problem caused by *Fusarium* has become more clear. The symptoms differ from those caused by *Glomerella* in that the leaves die from the bottom upwards, rather than from the top and middle of

the leaf down to the pseudo-bulb. Also, *Fusarium* may cause a yellowing of leaves produced by toxic materials. In some instances, the infection begins in a young 'lead' or flower spike and spreads progressively into the older pseudo-bulbs. However, both *Glomerella* and *Fusarium* can kill the pseudo-bulbs and so the final symptoms from the two diseases may be similar; and it is easy to see how there is some confusion.

Some diseased pseudo-bulbs have brown-purple spots or flecks inside them, but this is not a reliable symptom. Flowers of some varieties fail to open properly, producing a 'sleepy' condition, and cut flower spikes are so short-lived that they are worthless.

## Fusarium species associated with the disease

There is a problem that many *Fusarium* species can colonise plant tissues killed by some other agent, so only when *Fusarium* is found inside an undecayed pseudo-bulb, it is likely that *Fusarium* is the cause of the disease. The species of *Fusarium* found in *Cymbidium* here are — *F. moniliforme*, *F. oxysporum* and *F. solani*; most isolates here being *F. oxysporum*. However, these species cannot be confirmed as pathogens until detailed tests are made.

## Distribution of Fusarium in Diseased Plants

In a pilot study, the pseudo-bulbs were studied for the presence of internal infections in relation to symptoms (5). The four plants studied all had *F. oxysporum* infecting the main lead, with the older pseudo-bulbs being progressively more healthy. (Fig. 1).

## Sources of Fusarium Infections in other Crops

Although many *Fusarium* species produce spores that can result in airborne infections, most of the infections occur from fungal sources in the soil, or compost (4). For this reason, attempts to control *Fusarium* diseases in other crops have concentrated on producing disease-free propagating

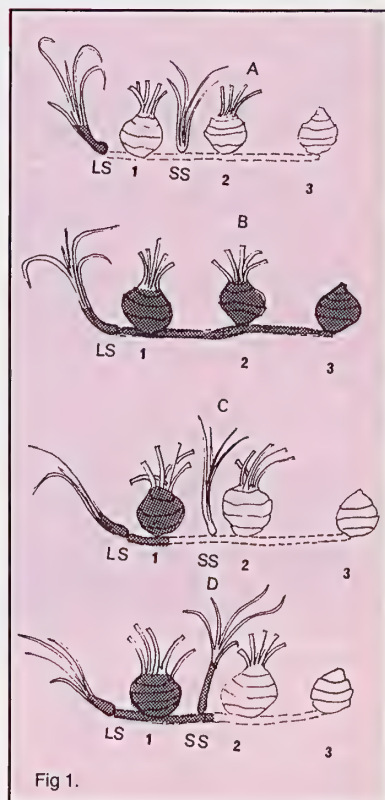


Fig 1.  
*Fusarium oxysporum* infections in four *Cymbidium* plants (LS lead shoot. SS side shoot. 1, 2, 3 is age of pseudo-bulbs).

material, which is later grown in a medium free of *Fusarium*. Therefore orchid compost materials such as bark, sawdust, peanut shells, sand, scoria, stone chips that have been in contact with soil are likely to be contaminated with *Fusarium*.

## Hygiene and Prevention of Fusarium in New Plants

It is particularly important though for commercial growers to grow plants on steel mesh or wooden slatted benches, well raised above the ground, to prevent splash of spores onto the plants, and as indicated, it is important to remove *Fusarium* from the compost used for plants coming directly from flasks. This is done, either by fumigation with methyl-bromide or by heat-treatment of the compost.



Methyl bromide is an effective fumigant, but the gas is a little hazardous to handle, so that heat treatment is the best option for removing *Fusarium* from composts.

#### Heat Treatment of Compost

Conventional heat treatment involves steaming at a temperature of 82°C for 30 mins, but a modification uses a mixture of steam and air at 60°C. The later method has the dual advantages of eliminating disease-causing fungi, without killing other beneficial soil microorganisms, and the heating costs are considerably lower. Ideally it would be possible for growers to buy composts treated to remove all *Fusarium* infections, but there is no such service available at present.

#### Control of *Fusarium* in Existing Infections

At present there is no known method of controlling *Fusarium* decline in orchids that are already infected, but several experiments are planned to look at the best options. These include some fungicides, known to reduce symptoms, in other crops infected with *Fusarium*, although this control does not produce a fully healthy plant. The other option is to use a form of biological control by adding wild type strains of *Fusarium*, that are unable to attack *Cymbidium*, but able to suppress the activity of the disease-causing strains.

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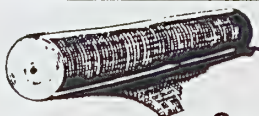
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# Kenneth A Macpherson better known



Top: Species Den *dearii* Centre: The MacPherson family home at Mount Dryander.  
Above: Field Day.

**B**orn just before the beginning of the First World War, of a Scottish father who had migrated to Brisbane as a child with his family in 1886. His father having come to Bowen by Coastal Trader after serving in the Boer War and Military Police in South Africa, settled in the Proserpine District. This now legendary figure in the plant breeding world spent his early life on a sugar cane farm selected as virgin country about 1909, in the Strathdickie area, by his father who hand cleared and grubbed the soil in preparation.

An interest in Orchids began before entering the old Strathdickie School in 1920, while the daily gathering of the farm animals gave him the opportunity to see the many fine specimens growing in the vicinity of his home. This love of flowers and all things natural, fostered by his Grade Two teacher, the then Miss Jurd, later Mrs Low, who only passed away this year, encouraged Ken to assist her in the lunch breaks to replant the school garden beds, coupled with an interest in the general botanical makeup of the District of Proserpine and its surrounds has led to the vast knowledge acquired in this field. His "achieving" had begun at an early age — in the first year of schooling he was awarded the medal for "the child who had made the greatest progress in the school".

Schooling was forced to come to an end in late 1927, when through illness, his father required assistance on the farm. Being the eldest of the family of five, he was able to lend much support. Eventually he was joined on the farm by his brother John, and between them they grew some 700 tons of cane on 25 acres. The purchase of a Fordson Tractor for £180 made their task a little easier.



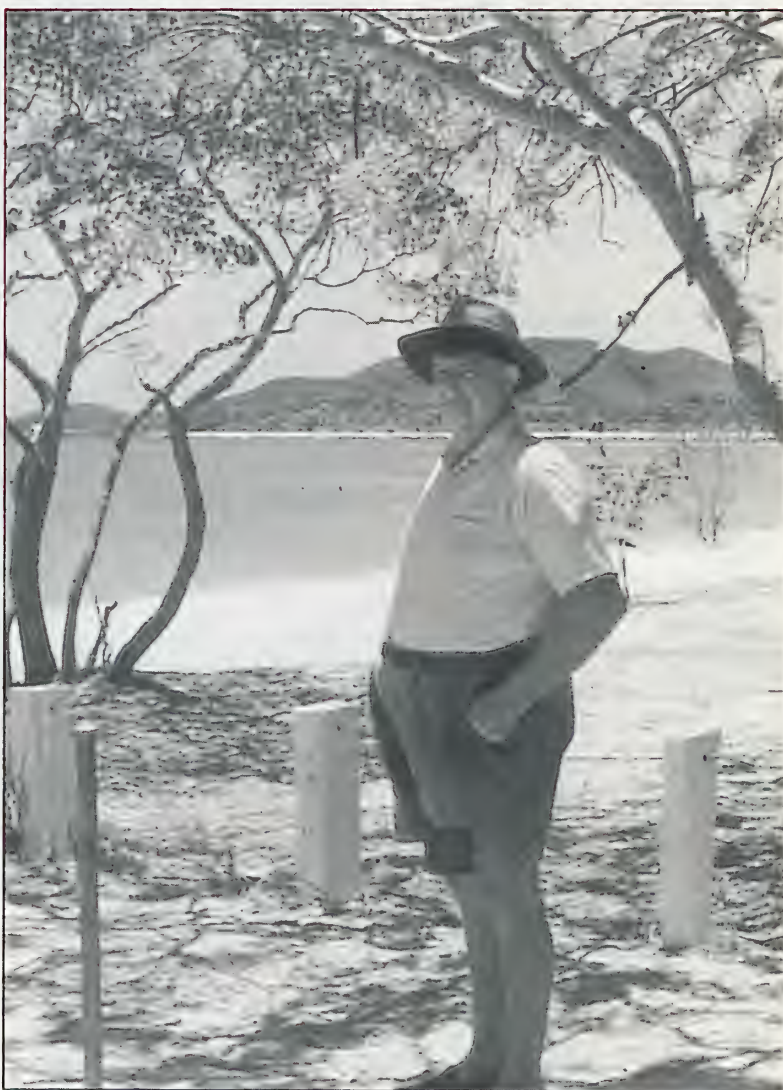
# Alexander erson, wn as Ken

Working at home did have advantages — the opportunity to view nature during his wanderings through the virgin bushland, his keen eye picked out many rare and some previously unknown specimens. This is evidenced by the number of plants and trees listed with the Herbarium and other centres through Rev. Rupp and Dr. Flecker, with these listings commencing in 1930 through until very recently and numbering close to sixty.† All the while quietly gathering knowledge of plants and their genetic makeup, which in time was to be put to good use.

Meanwhile, various native orchids were finding their way home to the farm, but the sight to see was the ponciana tree smothered with Ti-tree and Golden orchids, with colour added by beds of dahlias and gladioli. One new species found in the Mt. Dryander area and germinating freely on a mandarin tree at the home farm was *Cleistoctoma orbiculare*, this being reported to Rev. Rupp who later described it in a magazine article as a "little gem of beauty."

A particularly pleasing specimen of a King Orchid found at Mount Dryander, produced literally hundreds of flowers. A photo of this plant in flower was forwarded to the North Queensland Register for publication. This caught the attention of a grower from Ayr who wrote offering to exchange a plant of *Cattleya gigas* V. *Sanderiana* for a piece of the King Orchid. Hence, in 1930 the seeds for the beginning of the orchid collection were well and truly sown.

Plants in this collection, acquired as early as 1933 are still thriving today, two mentioned are *Vanda tricolor* (species) and *Cattleya skinneri*. With so many varieties in this collection, it



Kenneth Alexander Macpherson.

would prove difficult to settle on just one special plant, but when questioned, Ken settled on a more recent acquisition, with little hesitation — a fine specimen of the species *Dendrobium dearii* from the Philippines holds a special place with its head of large white flowers.

†Within 6 years i.e. 1936 a record was compiled of some forty six species of terrestrial and epiphytic native orchids growing in this district.

During the time of the depression anything at all to supplement the family income was tried, so the keeping of bees in 1929 - 30 was another avenue experimented with. The wild bees kept in 1930 were soon exchanged for pure bred bees, when an oldtime bee-keeper showed Ken the finer points of keeping bees in proper hives and the results achieved from purchas-

ing pure bred Queens from the South were most desirable. The situation improved to such an extent, that within a few short years the number of colonies increased to 120 and honey production was in full swing — being sold for the princely sum of 26 and 29 shillings per 4 gallon tin. It did not always run smoothly though — 11 months and 3 weeks without rain — then 72 inches in 9 days — all that was left were 35 hives, but Ken being a stayer this did not deter him.

Bees are still part of his life today, but in a much smaller way, more for pleasure, and to keep his hand in!

With the advent of World War II, the activities were all placed on "hold" while service in the Militia took precedence.

Amidst these setbacks, slowly a





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mass of various plants were being gathered in one place, which in time were to have their home at a spot called Gloucester Park at Sinclair Bay.

Connections with this Bay began around 1924 when family annual holidays were always spent at Dingo Beach, around the corner. Realizing the possibilities, Ken always kept at the back of his mind the beautiful corner and hoped in time to make his home there.

His dreams came to fruition in the early 1940's. Several hundred palm trees, and an array of exotic tropical specimens were planted. The tropical paradise was beginning to realize.

In 1948 Ken married Anne Hickey, originally from N.S.W., who with her family had moved to the Conway area in 1937. Together with his wife and a lot of hard work, a popular holiday destination was then completed for tourists. Two children, a daughter then a son were to arrive on the scene later.

Fishing and shell collecting were the order of the day, and when life was flowing smoothly along would come the odd cyclone for a change.

Ken's escapades up and down the coast both on land and in small craft would take a book to cover on their own. One trip recalled which was intended primarily to study reefs, ornamental trees and shrubs and bird life in his capacity as a National Parks Honorary Ranger, could have ended up with at the least a lengthy swim to the nearest Island, if he had not been so capable in handling this 12 foot dinghy. A 60 foot whale and her 25 foot calf sprayed them with water, shot into the air, then flashed away, also a school of porpoises decided to play around them, then a strong South Easter whipped up a 20 foot sea, all of which made the boat look ridiculously small!

The journeys sometimes took many weeks and today there would not be many ranges and hidden corners that have not at some time heard the tramp of his boots. In conversation, Ken often make reference to a particular tree smothered in orchids, just growing beside the road way — today these specimens are gone to make way for "progress".

It was during these travels in the Gloucester area that Ken made the first sighting of the famous tree climbing wallaby. At the back of the Park he heard dogs barking, on checking found to his surprise a wallaby on a branch of a tree some 15 to 20 ft. up. After a number of later sightings he reported this to the Wildlife Society in 1965 and the rest is history.





Some of these are seedlings. *Spathoglottis*, reared by Ken.

The collection gathered at Gloucester Park included species plants from far flung corners of the world, most being no longer available due to very stringent export restrictions on the part of the countries concerned — plants such as *Rhyncostylis retusa* var *alba*, a much sought after treasure today, arrived in “swap parcels”.

With much sadness, Ken parted with Gloucester Park in the mid 1950's, but the orchid collection remained at Sinclair Bay in the care of his Mother, through the week, and he made the journey each weekend to tend it.

Sinclair Bay was to prove the ideal situation for growing Dendrobies and it is from this area that the famous Gloucester line evolved and is named.

From a pod of seed of *Phalaenopsis* germinating on a peat surface on top of the parent plant's pot, to seed of the *Den. discolor* var. *Bloomfieldii* sown on the south western side of a Moreton Bay Ash, where extensive germination took place to the sophisticated methods of flasking being carried out in Sydney Ken tried various crosses e.g. *Den. discolor* var. *Bloomfieldii* with Soft cane Dendrobies *D. nobile*, *D. primulinum*, *D. pieradii*, *D. superbum* — always good germination but on removal from the flask the plants were unde-

cided as to how to develop. This was left as unsatisfactory.

During the next decade many fine plants were produced from our native and near native dendrobies including *D. caniliculatum*. Some fifty crosses were made from this orchid.

*Den.* Gloucester Sands did not just “happen” overnight, some 9 crosses made in different years, before the end result — medium sized growth, long and many flowered spikes in a wide range of shades, this being the forerunner of a long list of Gloucesters including *D. Charm*, *Dawn*, *Sunsets* etc.

Breeding from here on was not all “plain sailing” — there were many setbacks, however further studies on the polyploidy of plants partly explained many problems.

So today..... far in excess of 1400 crosses have now been made — some successes, some failures, but all aimed in the one direction.

The final seal of approval was given the *Den.* Gloucester Sands when it received a high award at the World Orchid Conference in Sydney in 1969.

Not only orchids are grown now — showy caladiums and selected hippeastrums tub grown, feature in this half acre plus of rock and gravel raised beds under the natural brush box scrub. A number of hippeastrum crosses grown to flowering size Ken has named “The Bride”; these feature

graduated shades of pink and are a joy to behold.

Some twenty five different varieties of avocados flourish on his Vine Creek property and in his travels is always on the lookout for another “newone”. After 20 years of growing avocados, the pleasure of having perfected the kilo plus fruit is his.

In past years he had become known as a water diviner of note and has a number of very successful bores to his credit.

Ken has always been active in the community and in earlier years held his share of positions as secretary to Farmers' Branches, Cricket and Tennis Clubs, as today is the Patron of the Local Orchid Society and Pistol Club. Judging of horticulture shows has become a regular occurrence over the last decade and a half.

Somewhere in all this was 25 years service to the Local Authority, as Parks and Gardens Curator in the latter years — and it is in this capacity that he has encouraged the wider use of our own local native trees especially “paper barks and bottlebrushes”. It is through Ken's insistence and perseverance that plantings of suitable shade trees along the foreshores of the Shires main beaches, the Jet Air-



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port, parks and streets have taken place.

Ken, together with others was instrumental in forming the Proserpine Orchid and Foliage Plant Club, later known as the Proserpine Orchid and Foliage Society, which, in this our Nation's Bicentennial year now celebrates their Silver Jubilee.

At the inaugural meeting in February, 1963 Ken was elected their foundation President with fourteen orchid lovers present. The President's chair, Technical Advisor and other positions he has filled over the years.

Ken is still active with the Society, judging competitions, attending field days and what brings much pleasure to a wide range of growers — are the many field days — some "mini" and others "large" that spend a rushed half hour stretched to . . . . . ¾ hour or three to four hours just browsing and talking "orchid talk" in the shade of the branches of the brush box cover of his "bush house".

The esteem in which Ken is held is evidenced by the number of Life Memberships of Societies from Townsville to Brisbane which he has received. Two years ago the highest accolade available to the Queensland Orchid Society was awarded "in recognition of his outstanding efforts in furthering Orchid growing in Queensland, in particular the pioneering work done in the breeding of the *Den. canaliculatum* hybrids".

More recently, in Darwin, at the Conference held on the occasion of the twenty-third anniversary of the formation of the Tropical Queensland Orchid Council, their Silver Medallion and Fellowship Award was presented to Ken with 100% approval. The Award is given for "service to the T.Q.O.C. and to orchid culture in general in North Queensland".

This trip to Darwin has been described as the highlight of his life, and one gathers the impression that a more leisurely trip to explore that distant section of our country is already being thought about.

In conclusion, there does not seem to be much that Ken at sometime in his life has not tried his hand at — in his own words years ago "I don't think my lifetime will be long enough for me to do all the things I want to do".

These lines represent only a very small part of a life filled with many joys and sorrows, but most importantly finally achieving in his chosen field.

Mary Friederichs  
July, 1988.



# The 1st Australasian Native Orchid Conference & Show

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Den Lorrikeet Peewee x Ellen – photo: Wal Upton

**T**he decision to hold the 1st Australasian Native Orchid Conference and Show by ANOS Council marks a mile-stone in the history of this organisation. It also marks a new era in the cultivation and hybridization of Australian orchids. A new era in the appreciation and popularity of our beautiful native orchids.

With the work that our hybridists are doing with the crossing of section *Dendrocoryne* and section *Phalaenanthus*, combining the cool growing *Dendrobiums* with the warm growing *Dendrobiums* from Queensland, a whole new market, a new interest and entirely new concept and beauty has been opened up. Growers are clamouring for seedlings and or flasks of such crosses as *Dendrobium* Elegant Heart, *D. Peewee* and *D. Lorikeet*. These cool growing hybrids provide a new elegance, a new beauty to these unique orchids. After all they are unique to this area of the World. The 1st Australasian Native Orchid Conference and Show is also unique as it is the first time such an event has been held and also because it deals only with orchids of the Australasian area. Native orchid growers throughout the area are looking forward to this event with excitement and interest.

## Conference Venue.

The University of Wollongong Pentagon was chosen as the conference venue because of its ideal lecture facilities. Being surrounded by spacious grounds and gardens. Having quick access off the Sydney Expressway with ample parking, it should prove popular with individuals and families alike. The Wollongong Botanic Gardens are adjacent to the University with the Rhododendron Park close by.

## The Conference Logo.

The Logo depicts *Pterostylis gibbosa* now endemic only to the Wollongong area and is one of Australia's rarest orchids. A great deal of work has been done by the Wollongong Group of ANOS in preserving this species. The Conference Badge which will be available at the conference also depicts this rare orchid.

## The Conference.

The Conference lectures will be held over three full days. They will cover such topics as the origins, distribution,



Den Elegant Heart 'Vibrant' – photo: Wal Upton



Den Elegant Heart 'Jill' – photo: Wal Upton



Den Peewee (campactum used) – photo: Wal Upton





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#### **The 1st National Australasian Native Orchid Show.**

Commencing one day earlier than the lectures and running for four days, the 1st National Australasian Native Orchid Show will be housed in the University of Wollongong's Sporting Complex. It was chosen because of its close proximity to the Pentagon, easy access and ample parking. With its undercover floor area of almost 900m<sup>2</sup> and modern facilities it should provide an ideal area for the many displays which Orchid Societies, Commercial Growers and individuals will want to take advantage of. First prize for the best display will be \$2,000.00 with the total prizemoney in excess of \$10,000.00

In close proximity to the Show will be a large commercial area, where hybridists and propagators will be able to sell many of the beautiful species and hybrids being produced today. This area will provide a rare opportunity for Badge Collectors to buy and exchange badges.

#### **The 1st Australasian Native Orchid Art & Photographic Show.**

This exciting addition to the conference and show will give a rare opportunity to view and buy paintings of Australasian Orchids by noted botanical artists.

An extensive Photographic Show and Competition depicting native orchids is also being planned in conjunction with the Art Show. Prizes to the value of at least \$3,000.00 are being offered for this event.

We expect to hold this section in the same building as the Orchid Show overlooking the displays.

#### **The Conference Tours.**

Guided tours are being organised before and after the Conference for those who would like to see many of the 200 species of orchids found growing in the area.

Wollongong, with its white sandy beaches, waterfalls, mountains, National Parks and many recreational activities will entertain adults and children alike.

#### **General.**

Wollongong is a thriving City of around 250,000 people. Nestling between the mountains and the sea it has the advantage of a magnificent coastline, spectacular mountain lookouts, secluded bushland, rare native wildlife



Den Suzanne - photo: Wal Upton

and rainforests with many beautiful beaches.

Wollongong is now an important international conference and tourist destination served by freeway conditions for much of the 80 Km from Sydney. It is well served by rail and commuter bus services to Sydney's National and International Airport with ample accommodation to suit all tastes and budgets.

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this auspicious and exciting event. ■

*Ron Wheeldon*  
Chairman

*Anos Conference Committee*

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# Orchids of the Innisfail and District

**T**his article is not a scientific report, but merely a visual observation from outings in the area over many years.

Innisfail is situated at the junction of the two Johnstone Rivers and roughly in the middle of the low wet coastal belt which stretches from Tully to the south and Fishery Falls in the north. This area lies between the low coastal range to the east and the Great Dividing Range to the west.

With an average rainfall of 160 inches (4064 mm) the orchids are used to plenty of water. Two-thirds of this rainfall is received in January to March/April with the following 8 to 9 months having showers and periods of dry weather.

Temperatures range from 8°C in winter and this for only a short time in early morning, to a high of 38°C in summer which is accompanied by high humidity.

As most of this wet belt has been

cleared and now used for sugar cane, banana and tea growing, there is not a great amount of virgin bush left to look for orchids. Available areas are swamps, coastal range and sea-front plus creeks and rivers that have trees along their banks.

Some orchids have survived in considerable numbers, mainly *Dendrobium discolor*, which is found from sea level (where high tide can reach the base), back into the Great Dividing Range. The odd plant of *D. discolor* var *broomfieldii* can be found by spending a lot of time searching at flowering time. *D. wilkianum* also grow in the areas where *D. discolor* abides and are difficult to identify unless in flower.

*D. canaliculatum* can be found in the wet coastal plain usually in an open area with plenty of light and breeze, also on open ridges on the coastal range.

The sort-after *D. nindii* is now very

scarce in this area, the Johnstone River being the approximate southern border. Some may still be found, but as one grower out to collect from the swamps remarked at the end of the day that it was easier and cheaper to buy one from a nursery!

Especially as he spent a lot of time waist deep in water, one eye looking for orchids, the other for crocodiles and wishing for a third for snakes and other creepy crawlies.

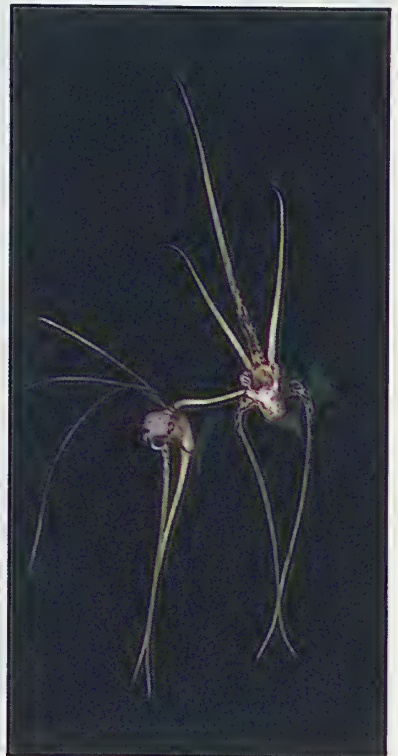
Another dendrobium that likes the swamp conditions is *D. baileyi* which is much easier to reach as the ones I have seen were growing 1½-2 metres above ground level.

*D. similliae* once very prolific in number in the southern section are no longer there as the land was cleared for cane farms.

*D. ruppianum* is also found in this southern section and as it is twenty years since I visited the site, I do not know if they remain untouched, they



*Den ruppianum*



*Den tetragonum* var *giganteum*





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too, may have been destroyed by clearing.

*D. teretifolium* has no preference as to habitat as I have noticed them along creeks and in patches of rainforest. They appear to like the tree tops which affords more light and breeze. This orchid not only inhabits the low coastal belt but is also found at high altitudes.

*D. tetragonum* is one that likes the rainforest and is not very common, appears more often in higher country. This orchid has two types, a small flowering and the larger type var *giganteum*.

One orchid that I have never found in its natural habitat is *D. rigidum* which grows mainly in coastal areas, usually mangrove, north from the Russell River.

Some of the other more common orchids found in the coastal belt is the *Cymbidium madidum*, which does not mind if it is on a tree or a rock. Quickly identified with its long trail of seed pods, which remain on the plant for many months.

Two other orchids which prefer the cool moist shaded creeks are *Cadentia hispidula* with insignificant flowers and fluffy seed pods. *Bulbophyllum baileyi* will grow on trees or rocks and often cover a large area when on a flat rock, while the tree-growing type goes straight up the trunk. The single flower from base of leaf is yellow with reddish-brown spottings.

*Pholidota pallida* I have seen in open ti-tree country that holds water for a time after rain and then slowly dries out.

A wide spread ground orchid is *Geodorum pictum* which is easily recognisable when in flower by its nodding flower-head of cupped pink blooms.

The attractive spotted pink *Dipodium ensifolium* is often found growing in sandy soil and is difficult to transfer from natural area to the bush house pot or home garden.

A victim of agriculture along the coastal plains is *Phaius tankervilleae* now very rare in this wet area. It is a much sought after orchid because of the large flower.

There are other orchids, but most have either very small flowers, and small growth like the *Oberonia*. One has to be a Native Species enthusiast to spend time and effort searching for these orchids which love heavy shade where the wait-a-while abound along with the occasional stinging tree.

Bill Huddy

Member — Innisfail Orchid Society.

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## BOOK REVIEW

### *The A & R Field Guide to Australian Orchids*

Margaret Hodgson and Roland Paine  
Publishers Angus and Robertson  
280pp, Hardback: RRP \$34.95  
Reviewed by David Banks

Yet another book on our beloved Australian Native Orchids. Unfortunately, however, 'The A & R' Field Guide to Australian Orchids' has nothing new to offer.

Over 360 species — both epiphytes and terrestrials — are depicted in the 280 page book. Each species is accompanied by a stylised coloured drawing, an abridged description, general distribution details and flowering time.

Many of the illustrations, whilst attractive, are botanically incorrect. In fact it would be difficult to identify many species from the information in this book. This, to my mind, defeats the purpose of a field guide. A number of the *Sarcanthinae* (ie. *Sarcochilus fitzgeraldii*, *S. hartmannii*, *S. moorei* and *S. olivaceous*) show the flowering inflorescence incorrectly coming from the apical bud and not from the leaf axil. In fact the plate of *S. falcatus* looks vegetatively nothing like the species. Another error in this regard shows the inflorescence coming from the rhizome in *Dendrobium wassellii*.

Common names are lavishly given to most of the species illustrated; including a few new ones (at least to me). Some of the more colourful are *Dendrobium fleckeri* (yellow moth orchid), *D. johannis* (flying acrobats) and *D. tozerensis* (cane orchid).

A number of subjective comments are made throughout the descriptions which completely baffle the reviewer.

*Dendrobium adac* is said to have 'flowers often of different sexes'; *D. lichenastrum* 'a controversial species, as close to *Bulbophyllum* as it is to *Dendrobium*' (even though the flower comes from the leaf axil and not the rhizome as in *Bulbophyllum*) and *D. bairdianum* 'a hardy, long flowering, distinctive species' obviously they have never tried to cultivate it!

An amazing range extension is given to *Cryptostylis ovata*, previously endemic to South-Western Australia — it has now allegedly been recorded from the Gibraltar Range National Park in Northern New South Wales. It is quite probable the plant in question will prove to be a vigorous form of *C. subulata*.

The range extension for *Dendrobium striolatum* is also quite interesting.

The authors acknowledge the assistance of a number of well known authorities on orchids. However I am certain they did not have the opportunity to read the manuscript before publication. An example — Steve Clemesha, one of Australia's experts on *Dendrobium speciosum*, is acknowledged — despite the fact that only two varieties of this species are mentioned. Steve was responsible for the epic review of *Dendrobium speciosum* into six varieties, published in 1981-82. The old generalisation of *D. speciosum* v *speciosum* only occurring on rocks and *D. speciosum* v *hillii* only on trees again is incorrectly perpetuated.

At \$34.95 it is rather expensive for a field guide. This book is really for the fanatic who collects every publication on our native orchids. Despite being twice the price, 'Native Orchids of Australia' by David L. Jones would be a far better investment.

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## LETTERS

Dear Sir,

"When a hybrid may not be the hybrid"

When David Jones published his marvellous work "Native Orchids of Australia" it became evident when I read the *Dendrobium* section (as it would to many other hybridists) that some of the major *Dendrobium* species and varieties used in hybridizing had now been designated their own names. For example:

*Dendrobium speciosum* var.  
*curvicaule* = *Dendrobium*

*curvicaule*  
*Dendrobium speciosum* var.  
*pedunculatum* = *Dendrobium*  
*pedunculatum*

*Dendrobium speciosum* var.  
*grandiflorum* = *Dendrobium rex*  
*Dendrobium speciosum* var. *hillii* =  
*Dendrobium tarberi*

*Dendrobium speciosum* var.  
*nitidum* = *Dendrobium nitidum*  
*Dendrobium speciosum*

and

*Dendrobium tetragonum* var.  
*giganteum* = *Dendrobium*  
*capitisyork*

*Dendrobium tetragonum* var.  
*tetragonum*

*Dendrobium tetragonum* var.  
*hayesianum*

*Dendrobium melaleucaphilum*  
(closely related to *Dendrobium*  
*tetragonum* var. *tetragonum*)

*Dendrobium cacatua* (closely related  
to *Dendrobium tetragonum* var.  
*tetragonum*)

A taxonomist determines that changes within a particular species are made where characters of the plant have shown a constant and distinct difference to each other. This brings me to the reason for writing. I am intrigued to know what happens to the hybrid: *Dendrobium* Hilda Poxon (and others). With this hybrid, I have noticed a large range of differences of flower and pseudobulb size, shape, colour and floriferousness which would indicate that hybridists in the past (e.g. when a *tetragonum* was a *tetragonum*) used a wide selection of both varieties either for size, colour or they may have used what was in flower at the time.

Is the hybrid name to be applied to one of the specific crosses above or is it too complicated to sort out?

Just looking at an old listing of registered Australian Native orchids,



*Dendrobium speciosum* has been used as a parent in 22 hybrids and *Dendrobium tetragonum* has been used in 18 hybrids and in addition these hybrids have and are continually being used to produce further hybrids.

Perhaps it would be a worthwhile project to be nominated for a future "F.W. Paddock Memorial Research Project" where the characterization of the flowering "offspring" of each of these crosses are documented, photographed and published.

**Rob Manning,**  
Perth Western Australia

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## New species Society formed in Western Australia

Eleven people met together in early 1988 to initially form the new society. A committee was formed to take the necessary action to further enhance its future viability.

Elected President was Neville Risbey, Secretary Ross Crimmin, Treasurer Joan Larson, Vice President Ted Larson and Committee members Noel and Eva Verweider and Gordon Doherty.

The main aim of the society is to advance, encourage, foster and promote interest in the natural history and culture of orchid species.

Since the first meeting, membership has increased to twenty-five. We are a very informal and friendly group which does not conduct monthly plant competitions. Each member who brings a flowering plant to a meeting is asked to give a description and culture of his plant. Other members have the opportunity to ask questions which may help them achieve a greater understanding of a particular species.

The society hosts monthly 'home visits' which are arranged at different members homes to view orchid collections. Besides the traditional "cuppa" and biscuits offered by our hosts the chance to look and learn at first hand of species culture also assists in promoting the society's objectives.

The society has commenced a catalogue of all species grown by members

in Western Australia as part of a guide to the number of species growing in cultivation. This will, in the future, be important in exchanging seed and keep species from becoming extinct.

The society meets on the fourth Thursday of each month (except December) at the Rotary Community Centre, Sandgate St, South Perth commencing at 8pm. If other orchid species enthusiasts are interested in joining the fledgling society or corresponding you can contact the President or Secretary. Or why not attend a meeting?

### President:

Neville Risbey, 3 Dean St, Karrinyup, 6018 W.A. Ph: (09) 445 1677

### Secretary:

Ross Crimmin, 28 Treen St, Baga, 6061 W.A. Ph: (09) 342 2430



Pictured is the perpetual trophy for the Grafton District Orchid Society Inc. Autumn Show. It is made from a piece of rosewood with a beautiful silver orchid on it. The silver orchid was made by a member, Alan Englert.

The trophy was donated by Joy and Norm Pearson, long time members of the society, in memory of their 18 year old grandson Clinton Pearson.

Nancy and John Biddle were this years winner with the champion orchid of the 1989 Autumn Show, Den. hardcane, Thailand X Madame Yudomeira, a beautiful very dark purple, almost black, colour and large open flower.

**Thelma Eldridge,**  
Publicity Officer,  
Grafton District Orchid Society  
Inc.



## PRACTICAL CONSERVATION WITH THE USE OF ORCHID SEED

The importation of orchid species is becoming more difficult and expensive because of various forms of legislation, and depredation of the natural habitat, and the awareness of many countries for the conservation of their natural heritage of their orchid species.

The question of conservation of the orchid species in Australia is very familiar to orchid enthusiasts, and while we have many successful species, that is, their habitat is wide spread, there are a number of species whose future is very fragile, because of the specific nature of the habitat in small pockets, or the safety of that habitat presently depending isolation and remoteness.

The A.O.F. Orchid Species Seed Bank was created because it was believed to be one of the more practical avenues of conservation and every effort should be explored that will encourage the commercial orchid nurseries to raise some orchid species from seed, and ideally, for that Nursery to promote their sales as "Nursery raised species".

Being practical, the commercial grower would be very interested in those species which may be termed 'very desirable' if that seed is available.

The main purpose of this preamble, is to emphasise that there is an urgent need for the seed of these desirable species to the amateur, as well as the commercial grower.

The AOF Orchid Species Seed Bank seeks your co-operation to encourage your friends to 'self' a few of these flowers as they come into flower. It is appreciated that the seed cannot be produced overnight. Many of the epiphytes will take 9 to 10 months to mature, and while many talk nonsense about conservation, here is a chance for you to do something really positive from the enormous number of very attractive species that have been imported into Australia in the past decades.

A number of Members of the AOF have been regularly supplying seed, both native and exotic, to the AOF Orchid Species Seed Bank to their credit, making a creditable good list of the seed available, and this segment of the Foundation is attracting more and more attention from overseas orchid enthusiasts which helps to make our efforts more encouraging.

It is the desire of the Foundation to enlarge this list of seed being available, hence this appeal to YOU personally. Dry seed, rather than green pods is being sought to enlarge the number of species available.

Let me repeat, that while seed from you will be most acceptable, it will be more wonderful if you can encourage your friends to join our contribution of PRACTICAL CONSERVATION of the orchid species.

Send seed, and all enquiries for seed to:

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- Lc. Scarlet Imp 'Irene' x Lc. Waikiki Sunset 'Kadaoka'
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- Bc. Greenheart 'Fantasy' x Bc. Trojan Gold 'Rose Marie'
- C. velutina x C. Penny Kuroda 'Spots'
- Lc. Scarlet Imp 'Irene' x Lc. Amberglow 'Magnificent'
- Bc. Sylvia Fry 'Wallacia' x self
- Bc. Yellow Ball 'Sunshine' x Bc. Sylvia Fry 'Wallacia'

##### OTHER GENERA

- Den. White Maiden x (Doreen 'Kamiya' x bicolor) white
- Den. Esther Furriagel x Hickam Deb selfed purple
- Den. Pauline x canaliculatum — curly & perky antelopes
- Den. teretifolium x aemulum — unusual native hybrid
- Sarc. falcatus x Sarc. hartmannii = Melba
- Sarc. fitzgeraldii x Sarc. hartmannii = Fitzhart
- Onc. ornithorhynchum x barbatum
- Miltassia Charles M. Fitch — remake
- Encyclia tampense x tampense

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- P. (Lippstadt x Arai) 'Pink Totem' x (White Maiden x Mariposang Puti)
- P. Lippeglut 'Pink Formal' x P. Romance 'Sweet Lisa' SM/JOGA
- P. Spring Doris x P. Romance 'Sweet Lisa' SM/JOGA

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- P. Dawn Hunter x P. Gladys Read 'Snow Queen' AM/AOS
- P. Blanca Grande x P. Dawn Hunter
- P. Yukimai #2 x Dtps. Double Trouble
- P. Hakalau Clouds x P. Hatsuyuki 'Blumen Insel'
- P. Winter Kaala x P. (Hamaoka x Mariposang Puti)
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- P. (Mount Kaala x Joseph Hampton) x Himeshirayuki
- P. Georgia Remaly x P. Blanca Grande
- P. Ibis x P. Mariposang Puti
- P. Dawn Hunter x P. Gladys Read 'Snow Queen'
- P. Zada Kaala x P. Lippeglut — pink
- P. Sarah Loeb x P. Romance 'Sweet Lisa' — pink
- P. California Glow x P. Romance 'Sweet Lisa' — pink
- P. Spring Doris x P. Romance 'Sweet Lisa' — pink
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# Orchid

Review

Volume 54 – No. 6

DECEMBER, 1989





# WHEN YORK SAYS "FLOWERING-SIZE" HE MEANS BIG, MATURE ORCHIDS!



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**C. velutina.** The treasure with the wavy-edged tawny gold flowers and the decorated white lip! I-H. Brilliant Christmas gift for your favourite orchid lover — even if it does cost you.....\$50

**C. granulosa:** the showy limey green with the spotted maroon lip. For a less expensive favourite orchid lover .....I-H \$35.

**C. harrisoniana:** Summer-flowering, rose-lavender darker than *C. loddigesii*.....I-H. \$30

**C. aclandiae.** Yellow-green petals, sepals, spotted with purple! Then a collar of glistening white projects the brilliant rose-purple lip. Good plants of this Brazilian species.....I. \$40.

**C. rex.** Huge flowers, creamy white with red and yellow on lip. Handsome Peruvian species; needs heat..... \$50.

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**Zygopetalum crinitum:** Waxy, green/purple/white flowers, highly perfumed .....I. \$35

**Oncidium leuochilum:** pretty, white-lipped flowers on long stem .....I. \$25

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AT \$35.**

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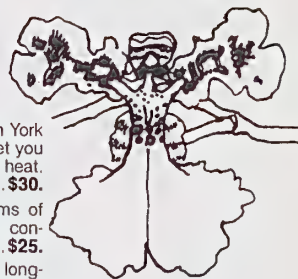
**O. hastilabium hybrid:** this is *O. hastilabium* crossed with an alba form of *Miltassia* Chas. M. Fitch. Big, lusty plants that have flowered already with the spectacular red/white *O. hastilabium* lip coming through. Easy-growing, generous-flowering. All that for.....\$20.

## ONCIDIUM SPLENDIDUM: SPIKES TO 4' AND MORE? \$30

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Volume 54 No. 6  
OF  
THE HERBARIUM  
OF  
VICTORIA

December, 1989

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### Cover:

*Paphiopedilum druyi* until recently this was the only *paphiopedilum* on Appendix I C.I.T.E.S. At the last International C.I.T.E.S. meeting in Switzerland all *paphiopedilum* species and hybrids have been placed on Appendix I

### Advertisers:

Advertising deadline for the February issue is January 5, 1990.

All advertising bookings and enquiries should be directed to Barry Badger.  
Phone: 319 1600. Fax: 698 9282.

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See insert.



The term Endemics has been used here to distinguish between those species which are found primarily on the Chinese mainland, distinct from those which are found both on the Chinese mainland and areas of South East Asia. I say primarily because I have also included the Vietnamese species. The so called "Interlopers" will be dealt with in a future article.

The species which have been included under the heading of "Endemics" include:

- Paphiopedilum henryanum* Braem
- Border regions of China and Vietnam
- Paphiopedilum barbigerum* Tang and Wang
- Kweichow area of Southeast China
- Paphiopedilum dianthum* Tang and Wang
- Guangxi, Tsingsi Hsien.
- Paphiopedilum hainanense* Fowl
- Island of Hainan off the coast of China
- Paphiopedilum purpuratum* (Lindl.) Stein
- Island of Hong Kong, Canton.
- Paphiopedilum gratixianum* (Sander) Guillaumin
- Annan area of Central Vietnam.
- Paphiopedilum affine* DeWildeman
- Xishuangbanna area of Yunnan.
- Paphiopedilum chiwuanum* Tang and Wang
- Purported to be found in Southeast Yunnan.

As more and more virgin forest falls to the Timber industry originally inaccessible areas are being opened, bringing with it the discoveries of many unidentified species. *Paphiopedilum henryanum* is one such species which was only discovered as recently as 1987. While on an expedition through the area Henry Azadehdel found the species. Shortly afterwards mass collections eventuated, possibly endangering the plants very existence. The plant is petite, displaying virtually all the colours of the rainbow, from the bright pink pouch, the chocolate petals, to the beautifully spotted yellow dorsal sepal. It would be difficult to find another 'gem' such as this in the orchid world. The species doesn't appear to require any particularly stringent cultural conditions and grows very happily amongst our other *Paphiopedilum* species. The only comment that needs to be made is that it is very slow to recover from the shock of importation. Once recovered however, growth is as with the other *Paphiopedilum* species.

Another plain green leafed species recently introduced into cultivation has been the lost and often confused *Paphiopedilum barbigerum*. Originally described by Tang and Wang in 1940, the true identity of the species was the subject of much debate in botanical circles. Some claimed that the plant was only a form of *P. insigne* while others argued that it resembled forms of *P.*

## Chinese Paphiopedilums – Part 2

# The Endemics

Text: R.D. Kramer

Photography: Salvador Castelo



*Paphiopedilum purpuratum*

*esquirolei*. Eventually all was revealed when Richard Topper flowered a plant of the species and its validity was verified by its describer. By this time many collections had been made and growers all around the world started flowering plants of the species. Again this species lends itself to very easy cultivation in the standard *Paphiopedilum* house. The plant is of only small habit with a small *P. spicerianum* like flower. Some forms we have flowered have the typical reflexed *P. spicerianum* dorsal sepal.

Arguments, or should I say "heated discussions", at times do erupt when botanists and *Paphiopedilum* enthusiasts have differing points of view regarding the validity of very closely related species. *Paphiopedilum dianthum* was originally regarded as merely a form of *P. parishii*. This occurred because nurseries were selling plants of *P. parishii* and labelling them as *P. dianthum*. Not until recently (about 1986), did authentic *P. dianthum* reach the botanical and horticultural world. Phillip Cribb of Kew Gardens still appears to be

unconvinced, and is publishing the plant as a form of *P. parishii*. Besides the morphological differences, the plant is also quite distinct genetically from *P. parishii*. No one can dispute that the species may originally have evolved from the same parent stock, but through geographical isolation, the species has over time evolved into a totally distinct species. Pod maturation times vary considerably between the two with *P. dianthum* pods ripening some 23 months after pollination, with *P. parishii* ripening after only 10 to 12 months. The floriferous nature of the two is considerably different with *P. dianthum* rarely producing more than 3 flowers per raceme while we have flowered *P. parishii* with up to 12 flowers. An average would be about 7 flowers. The flowering raceme of *P. dianthum* is totally glabrous (ie devoid of bristles) while that of *P. parishii* is considerably hirsute. While Phillip Cribb may wish to discount these important features so relevant to botanical classification, conservationists are concerned that if noted botanists pub-





Top: *Paphiopedilum gratixianum*. Above: *Paphiopedilum hainanense*

lish such views, the possibility of loss of species identity is inevitable. I personally am already seeing the effects of such misguided comments with growers crossing two separate species believing them to be the same and producing masses of artificial hybrids.

Geographic isolation has kept *P. hainanense* isolated from its sister *Spathopetalum* and producing a distinct form of the subgenus. The plant is very closely related I believe to *P. robinsonii* from Mt. Tahan in Malaya. The two appear almost identical with only slight variations in the staminode and lip incisions. The plant has very rich colouring compared to *P. robinsonii*.

Urbanisation of the island of Hong Kong has seen the habitat of *P. purpuratum* slowly disappearing. If this was not bad enough, locals were known to collect plants for fishtank ornamentation. Fortunately, colonies have been discovered off the coast of mainland China. The beauty of the small purple flower is legendary.

Again the validity of *P. chiwuanum* still hangs in the balance as no clear cut description or photographic evidence has been rendered up to this time. Ray Rands from America originally sold a reddish form of *P. spicerianum* as the true *P. chiwuanum*. The original description of the plant was taken from a dried unopened flower, and would you believe the colour of the flower was actually published from this specimen. To further confuse matters, at the recent World Orchid Conference a plant was exhibited under the guise of the aforementioned species which appeared to be merely a very small form of *P. esquirolei*. Perhaps some time in the future the true identity of the species will be revealed.

The remaining two species which I originally placed under the classification of "Endemics" are the Vietnamese species. These are found in very localised areas of Annam, Central Vietnam. Again, confusion reigns supreme as to the validity of *P. affine* as opposed to *P. gratixianum*. I believe the two to be conspecific, having, I again believe, been named as an individual species mistakenly. After much searching I was able to obtain a copy of the original description of *P. affine* which only left me to surmise that the 'two species' descriptions were in fact dealing with the same species. This theory was further strengthened when an article appeared in the Orchid Digest written by Buddy Mark of Hong Kong, showing two photos of the supposed individual species. All the photos showed were possibly two distinct geographic forms of the same species, *P. gratixianum*. I have witnessed three distinct forms of *P. gratixianum* each as beautiful as the next. The standard form (as seen in the Photo) hails from





central Vietnam while a very red form has recently been introduced from China (possibly the plant which has been masquerading as *P. affine*). The third is a form selling as *P. gratixianum* var *giganteum*. It is the same colour as the Central Vietnamese form differing only in the monstrous foliage (up to 90cm long by 7cm wide). Seedlings have recently flowered of this form most being identical to the parent plants with several being pure yellow/orange without any spotting.

#### Culture:

Our standard potting mix has always been a combination of 4 parts bark, 2 parts small pebbles, 1 part moss. Plants like this mix under our conditions and grow very well. Minimum temperature should be around 14°C, with plants being well shaded. Never allow plants to dry out completely as this retards growth. The moss in the mix should grow to the surface if conditions are optimum (ie) balance between light, temperature and humidity.

to be continued

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*Paphiopedilum barbiggerum*

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# Virus Diseases of Cymbidiums and other Orchids

## Introduction

Virus diseases are probably the problem of most concern to orchid growers, and it is important that the basic facts are established.

### Kinds of Viruses present in Orchids

In Australia, three kinds of viruses are commonly found in orchids. These are Cymbidium Mosaic Virus (CyMV), Odontoglossum Ringspot Virus (ORSV), also previously known as Tobacco Mosaic Virus — Orchid strain and Orchid Fleck Virus (OFV). Although names such as Cymbidium Mosaic Virus and Odontoglossum Ringspot Virus imply some special relationship between the virus and the orchid Genus, the name was given to the virus, merely because it was first found on that orchid. All these viruses can infect all commonly cultivated orchids, and probably all orchid genera.

A recent survey showed that there was the following distribution among records of these viruses in N.S.W.: CyMV 8.7%, ORSV 61.9% and OFV 29.4%. These findings are at odds with those elsewhere, for it seems OFV is only common here, and elsewhere it may be of no significance (Zettler *et al.*, 1978).

### Characterisation of Viruses

Viruses are characterized primarily on their size and shape, although this aspect is complicated, because some viruses may show a range in dimensions.

The size of viruses is measured in nanometers (nm). One nanometer = 1 metre x 10<sup>-9</sup> = is one millionth of a millimetre. The sizes are given in Table 1.

**Table 1.** Sizes of viruses infecting Orchids.

	Length	Diameter	Shape
CyMV	475 nm	13 nm	flexuous
ORSV	1300 nm	18 nm	rod
OFV	150-100 nm	40, 32-35 nm	shaped bullet shaped

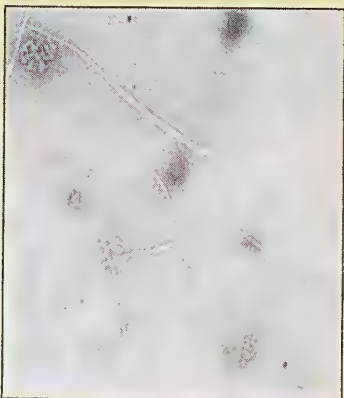
### Detection of Orchid Viruses

When specimens are suspected of having virus infections, the sap can be

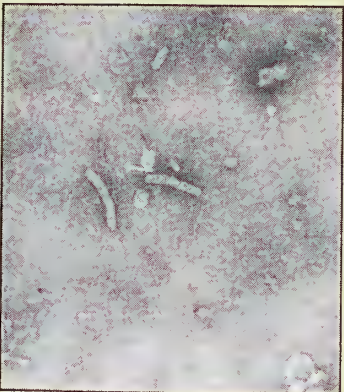
**FIG. 1 VIRUS PARTICLES COMMONLY FOUND IN ORCHIDS x 50,000 MAGNIFICATION)**



Odontoglossum Ringspot Virus (ORSV)



Cymbidium Mosaic Virus (CyMV)



Orchid Fleck Virus (OFV)

tested for presence of the characteristic virus particles under the Electron Microscope (E.M.). Any virus particles seen can be identified from their size and shape, but if none are seen, the specimen, although free of detectable virus, cannot be guaranteed virus-free. However, there are two improved methods for virus detection, one using a method called, Immune Electron Microscopy (Wisler *et al.*, 1983), and the other is the ELISA method. Compared with E.M., the ELISA method was 217% more effective, for CyMV, and 115% more effective for ORSV (Pearson & Pone 1988). Neither method can be used for OFV which causes particular problems in its detection. For example, twenty plants which initially had OFV present, and still had symptoms of OFV, were retested after an interval of 1-2 years. OFV was only detected in only 10% of them, using the same E.M. technique. That is, OFV was not detected in 90% of the plants which were infected, because plants *never* recover from virus infections.

The absence of detectable virus particles does not mean that no virus is present, because fractions in the sap may obscure the particles of viruses, or the virus may be at a low concentration.

Obviously the present methods for the detection are inadequate, and ideally a better method to replace the

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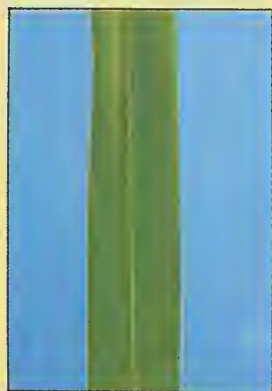
Contact:

**Peter Larkin**

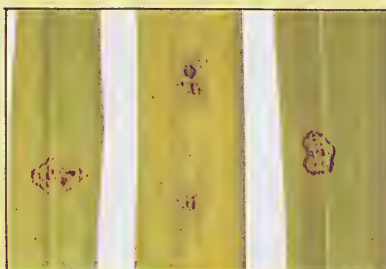
(02) 525 6330 (after 4pm)



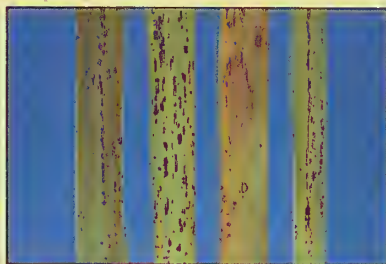
**FIG. 2 SYMPTOMS OF CYMBIDIUM MOSAIC VIRUS**



Young leaf showing pale blotches



Older leaf showing ring symptoms

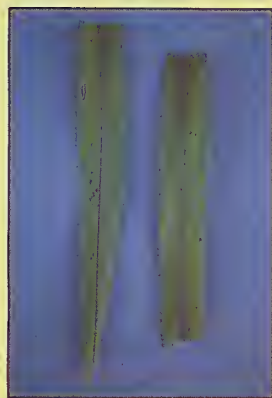


Elongated dark brown markings in older leaf

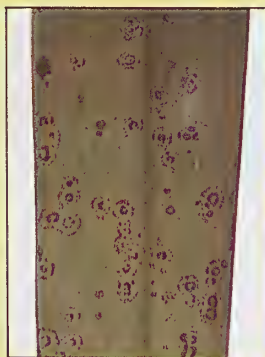
**FIG. 3 SYMPTOMS OF ODONTOGLOSSUM RING SPOT VIRUS (ORSV)**



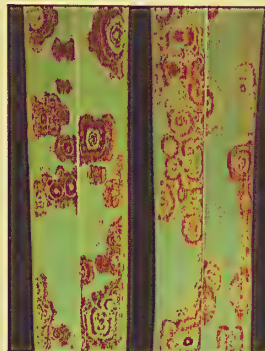
Young leaf with blotched pale areas



'Flecks' on mature leaf



Ring spot on mature leaf



Ring spot on mature leaf



Symptoms on flower



Symptoms on flower

existing one would be able to detect all three viruses whenever they are present. Meanwhile, the best method of detection is probably by eye, bearing in mind that in general, sudden changes in leaf colour are caused by viruses, whereas gradual changes are produced by nutritional problems etc.

## SYMPTOMS OF VIRUSES IN CYMBIDIUMS, AND OTHER GENERA

### Symptoms in *Cymbidium* Leaves

The symptoms of virus infection are most clearly seen as a pronounced blotching in the young leaves. Symptoms vary according to the cultivar, temperature, age of leaf, but those illustrated are typical (Figs, 2, 3, 4).

In particular there is a nice point, that OFV is equally severe on both sides of a leaf, whereas CyMV and ORSV are more evident on the upper leaf surfaces.

### Symptoms of Virus Infections in *Cymbidium* Flowers

The pattern of flower symptoms varies greatly, most *Cymbidiums* showing no symptoms, but a few cultivars show a colour spot with ORSV infection.

### Symptomless Virus Infections in *Cymbidium* Leaves

In addition to the problems of detecting virus particles in plants with symptoms of the disease, there are other problems caused because virus in some plants can be symptomless. This can be due to a time lag between infection and symptom expression, or to a particular combination of cultivar and virus that may never show symptoms.

## SYMPTOMS OF VIRUS INFECTION IN LEAVES AND FLOWERS OF *CATTLEYA*, *DENDROBIUM*, *VANDA* ETC.

There are many other orchids for which the symptoms of these virus diseases are incompletely known. However, in many of these genera the symptoms are much clearer than they are in *Cymbidium*. Examples are ORSV in *Cattleya*, *Dendrobium* and *Vanda* where the 'ring-spot' symptoms are clear, but for others e.g. CyMV in *Lycaste* the symptoms are obscure. Colour break in flowers is a relatively common symptom of ORSV (Fig. 5.)

## VIRUS - LIKE SYMPTOMS PRODUCED BY FALSE SPIDER MITE

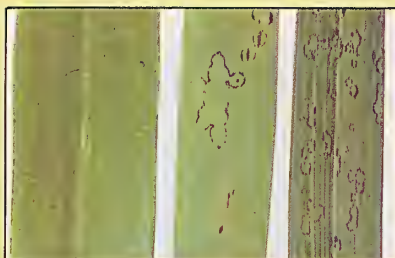
The False Spider Mite (*Tenuipalpus brevipalpus*) causes virus-like symptoms which spread with the infestation. These symptoms can be confusing as they can be seen long after



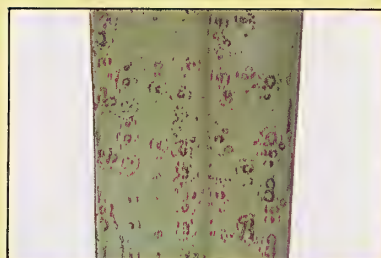
**FIG. 4 SYMPTOMS OF ORCHID FLECK VIRUS (OFV)**



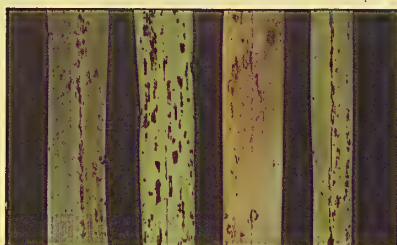
Young leaf showing pale brick shaped areas



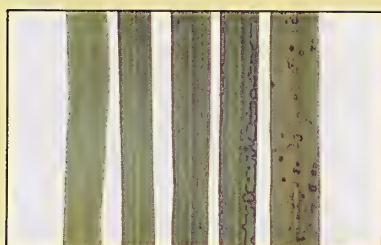
Maturing leaf



Older leaf



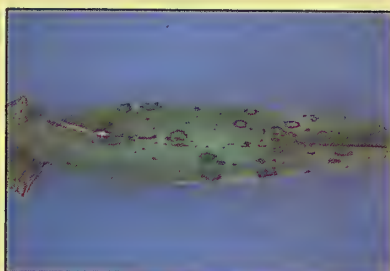
Symptoms on upper surface



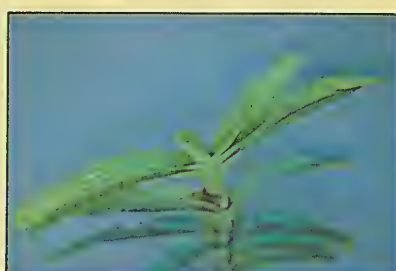
Symptoms on lower surface

**NOTE:** Orchid fleck virus shows good symptoms on upper and lower sides, the other two orchid viruses show only faint symptoms on lower surfaces of leaves.

**FIG. 5 ODONTOGLOSSUM RING SPOT VIRUS ON CATTLEYA, VANDA AND DENDROBIUM**



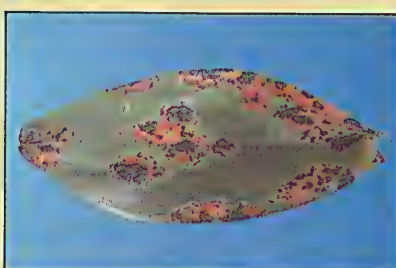
*Vanda coerulea* with ORSV



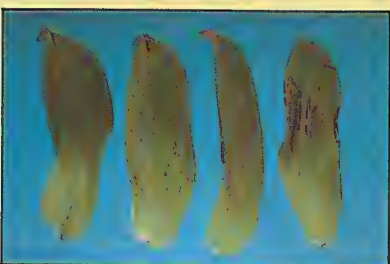
*Vanda* sp with ORSV



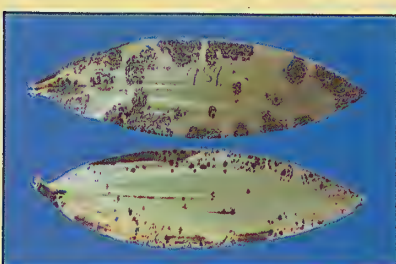
Flower 'break' in *Cattleya* caused by ORSV



*Dendrobium speciosum* with ORSV



*Cattleya* with CyMV



*Dendrobium x delicatum* with OFV



the initial infestation, when there are few or none of the mites present but they are consistently worse on the lower sides of leaves (Fig. 6).

## PHYSIOLOGICAL DISEASES OF ORCHIDS

A physiological disease is one where the plant's functioning is disturbed, by some factor related to the growing conditions rather than by a fungal, bacterial or virus disease. However, of practical importance is that the symptoms of some physiological diseases could be confused with those caused by viruses, so details of some of these will be described.

1. *Phalaenopsis* spot. (Fig. 6). This has been associated with a long period of humid weather, but the exact cause is unknown.

2. *Copper damage*. (Fig. 6). This is caused by copper oxychloride or copper hydroxide. Symptoms are more severe on the lower side of the leaf in contrast to those of all the virus diseases. There is usually severe damage, and even death, of the young leads, and also there may be large dead areas on the leaf bases.

3. *Tetragonum* Spot. (Fig 6). This is a genetic and quite normal condition in seedlings of *Dendrobium tetragonum* ancestry.

4. *Clustered Speckle*. (Fig. 6). These symptoms have a superficial resemblance to the 'ring spot' type symptoms produced by the virus diseases ORSV and OFV. However, the outer edge has no precise limit, and young leaves are free of symptoms. The cause of this problem is unknown, but in common with other conditions not caused by these viruses, the symptoms are worse on the lower sides of leaves.

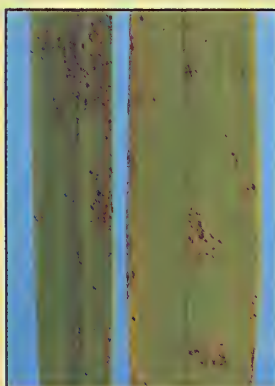
## TRANSMISSION OF ORCHID VIRUSES

There is a widespread belief among growers, that orchid viruses are spread by insects. Apparently this is based on a claim that peach aphids spread the virus, that is now known as ORSV. (Jensen, 1949). There is no other evidence that either ORSV or GMV are spread by insects etc. (Lawson & Brannigan, 1986), so we can assume these viruses are not carried by insects.

However, OFV belongs to the Rhabdo-viruses most of which can be spread by an insect, usually one insect species for each different Rhabdo-virus. It would not be surprising then if the higher incidence of OFV in Australia was due to insect spread.

There are other virus diseases affecting orchids which are spread by insects. These are either ones like Bean Yellow Mosaic Virus, which has been

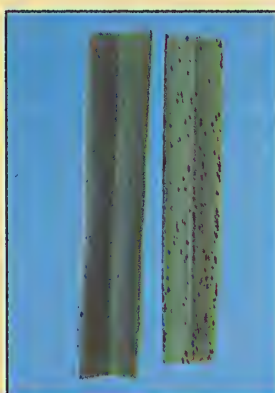
FIG. 6 SYMPTOMS OF PHYSIOLOGICAL CONDITIONS



False spider mite damage. Strong symptoms are also found on the lower sides of leaves.



*Phalaenopsis* spot, a virus-like condition which is not caused by any pathogen.



Copper damage on upper side (LHS) and lower side (RHS), produced by copper oxy-chloride



Deformed flowers produced by chlorothalonil (Daconil) being applied too late.



Tetragonum Spot



Clustered speckle upper side (LHS) lower side (RHS).

isolated very rarely from orchids in Australia, or Vanilla Mosaic Virus, spread by aphids, which is absent from Australia. So far, this virus has only been found in Tonga and French Polynesia, (Pearson & Pone, 1988; Wisler & Zettler, 1987), and probably it is also in Madagascar (Malagasy Republic). Obviously orchids should not be imported from such areas.

### Seed Transmission

Seed-borne spread does not normally occur, as the seeds themselves are always free of virus, but spread occurs when the green 'frass' is planted

(Yuen *et al.*, 1979). This inability of the viruses to be carried in dried seed is the reason for viruses not being found in orchids collected from wild sources. (Zettler *et al.*, 1978).

### Pollen-borne spread

Recent information shows that *Cymbidium* orchids, infected with ORSV or CyMV can carry virus infections, and so presumably could produce infected seedlings. (Hamilton and Valentine, 1984).

Clearly, there is the possibility of producing virus-infected seedlings from infected pollen.



## Human spread of orchid viruses

As far as is known, only man is responsible for the spread of the three viruses, CyMV, ORSV, OFV. The spread occurs by surface transmission on secateurs or knives used in handling the crop. ORSV is present also in contaminated soils or pots. ORSV is not spread by the hands of smokers, although the related Tobacco Mosaic Virus is spread in this way.

## CONTROL OF ORCHID VIRUSES

It is important to appreciate that once a plant is infected with a virus it remains so. There is no method by which virus in a whole plant can be eliminated by chemicals, without also killing the orchid. *Control then must rely on preventing infections from spreading to healthy plants.*

There are two alternatives for control of spread on knives and secateurs — either replacement blades should be used whenever an infection might be transferred to another plant, or the blades should be sterilized between cutting different plants. This sterilization may be done by heating the blade to a cherry red colour, but there is also the option of dipping the blades in sodium hypochlorite 3%, for three minutes.

The latter method has a lot in its favour, but it is best to use two pair of secateurs, one to soak in the solution in readiness for the next plant. Sodium hypochlorite as used as swimming-pool chlorine diluted 1:4, and solutions should be discarded when they become discoloured. Formalin has the potential to produce cancer, so it should be avoided.

A modified secateur (Felco 19) sprays sodium hypochlorite onto the secateur blade, and no virus was spread by these secateurs when used in tests. However, there is no guarantee that spread will never occur when using such secateurs. When repotting, avoid soil contamination by placing fresh newspaper on the bench each time a new cultivar or group of a clone is handled, and dispose of this soil in the newspaper each time.

## Meristem cultures

Technically a meristem culture is produced from the meristem proper i.e. the actual growing cell and 8-12 cells around it. However, in practice, it is easier to dissect out a larger piece of tissue, and also such pieces of tissue produce more of their requirements for growth substances, and so they grow better than the true meristem cultures.

However, in a virus-infected plant only the meristem proper is free of virus, so before a tissue culture is

established, the entire plant should be tested for freedom from viruses. Obviously, there will be problems if the methods for detecting viruses are not fully reliable, especially in the detection of OFV.

## CONCLUSIONS

Plants should be suspected of being infected if there is any marked mottling of the new leaves. The Electron Microscope is also useful for characterising a virus, but it has definite limitations, particularly with OFV, so until better detection methods are available, growers should rely to a greater degree on visual symptoms.

## Future production of virus-free mericlones

The existing system of virus detection describes plants either as 'virus-infected' to 'no virus particles detected'. From previous information, it is easy to see how a plant in which no 'virus particles were detected' could be contaminated, and this is most likely to occur with plants carrying Orchid Fleck Virus.

With this background, there is a need to be able to test orchids before mericloning, using more sensitive methods, of which the most suitable is probably the ELISA method.

## PROBLEMS RELATED TO VIRUS DISEASES OF ORCHIDS WHICH REQUIRE FURTHER RESEARCH

- Improved methods of detecting viruses in plants scheduled for mericloning.
- Is Orchid Fleck Virus insect transmitted in Australia?
- Improved methods for surface sterilizing knives and secateurs, particularly using non-corrosive chemicals.
- Better description of some physiological problems, where there are similarities to virus diseases.
- Can the weakened strain of Odontoglossum Ring Spot Virus (ORSV) be used to protect plants from typical ORSV?

As orchids can be symptomless virus 'carriers', there is the possibility of these in mixed collections, so all plants with an unknown history should be treated as if they had virus. That is, implements should be sterilized before each plant has been trimmed, potted etc. In practice, larger growers will have batches from the same seed line or mericlone. Such batches can be treated as if they were a single plant and blades sterilized only once for the batch of plants.

With these measures, the virus disease will be less of a problem, but one which we will always have.

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# Species Orchids of the Herbert River District

by Merv. Cockrell

**T**he Herbert River District of North Queensland is well known for its many native orchids which number hundreds of individual varieties in the various areas spreading from the hinterland to the coast.

The district once was completely covered with various types of open forests which included ti tree country, stands of large gums and low land areas sprinkled with billabongs and creeks. Other orchid habitats include the mangroves of the Hinchinbrook Channel and the oak forests and rain forests of the mountains. Hinchinbrook Island is the home for orchid species which seem to have evolved into localised variations of more common species found on the mainland.

Despite the thousands of acres cleared in the Herbert Valley for agriculture and more recently for the planting of pines by the forestry, most species have survived.

Orchids found in the mountainous hinterland are as varied as the type of country itself. The most sought after of these would have to be the coveted *Phalaenopsis amabilis* var *rosenstromii* which is commonly called the Mt. Spec Orchid. This magnificent orchid is still found here in the Seaview Ranges but the road into the area has been rendered impassable by cyclone damage and this has saved this species from its most savage predator — the orchid collector.

Most common of the orchids still found (in the hinterland) are *Cymbidium canaliculatum* and *C. suave*, *Dendrobium canaliculatum* and various ground orchids such as *Nervilia discolor*, *Diuris*, *Hetaeria* and *Pterostylis*.

Closer and amongst the rain forests are found dendrobiums of many types, mainly *D. monophyllum*, *D. speciosum*, *D. ruppianum* and *D. agrostophyllum*.

Numerous bulbophyllums such as *B. baileyi*, *B. gadgarrense* and *B. macphersonii* and many others. There are also many of

the small species, some of the more interesting ones include *Calanthe Cadetia*, *Oberonia*, *Liparis* and *Sarcochilus ceciliae*.

Close to the foot of the western ranges there are found two different types of orchids they are the upright pencil *Dendrobium beckleri* along with



Top: *Dendrobium smilliae*. Above: *Dendrobium ruppianum* var *magnificum*.



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the leafless *Taeniophyllum*. Many of the more common orchids of the Valley start in this area also and extend through to the coast. They include *Den. teretifolium* and *Den. discolor* whose colour variation is so vast that one would be forgiven for thinking that some are almost different species. Other more generally found specimens are *Cymbidium madidum*, *Den. canaliculatum* and *Den. tetragonum*.

These make up the bulk of orchids found in the Herbert Valley; occasionally the odd species is found that does not belong here and these often come down with floods from the Rainforests and Tableland and lodge in trees along the banks of the Herbert River and adjacent creeks.

Two other interesting areas are the mangroves and the Cardwell Range. The most common orchids in the mangroves are *Den. discolor* and *Cymbidium madidum*.

The Cardwell Range area however has some varieties unique to its very small area; these include *Phaius tankervilleae* and *Dipodium* as well as *Den. smillieae* and *Eria inorata*. These are usually found further north. A further interesting orchid is an alba form of *D. tetragonum* and a natural hybrid *D. x superbiens*. I personally have witnessed these and also a few colonies of *D. bigibbum* which should not be in this district at all.

These are but some of the hundreds of species found here and after many kilometres of walking through these areas over a quarter of a century may I share a couple of the highlights with you. Once I came across a huge rock face almost totally covered with *D. speciosum* and *D. ruppianum* in full bloom; this was a real breath taker as was one tree overhanging a billabong on which a horizontal branch about five metres long had near 100 *D. discolor* on the upper side and as many Pencil Orchids all in full bloom at the one time. I am happy to say that both of these areas still are intact. Another rare sight was a *Galeola foliata* growing in a decomposing log and in full bloom and would you believe not a camera in sight.

The Herbert River Orchid Society is a very active Society and plans to hold the 1991 T.Q.O.C. Conference here in June that year and for that conference we have chosen the *Dendrobium discolor* as our logo because of its local prominence. Should you be interested in visiting this district for the Conference write to P.O. Box 304 Ingham, 4850.

**Mervyn C. Cockrell**  
President Herbert River  
Orchid and Allied plant Society.



# New Avenues in Breeding — Cymbidiums

**B**eing a plant breeder, I am always on the lookout for something new or different to try.

Every once in a while a bonus appears which seems to offer a new avenue in breeding.

In one of the flasks of the cross *Cymbidium* Chocolada 'Takapuna' x *C.* Wallara 'Gold Nugget', I noticed a tiny seedling which had its leaves edged in white. This was in turn grown on, being notoriously difficult in the early stages to obtain much growth. The tiny seedling was brought indoors where it subsequently improved and when near the first bulb stage was returned to the glasshouse. After the first bulb stage the plant grew normally and was placed in the shadehouse along with the other cymbidiums. It has never looked back although its overall growth habit is a little slower than its full coloured counterparts.

This seedling first flowered for me this September and the whole plant carries the variegation. All of the leaves have the top third of their leaves edged in white and the spike sheaths were also variegated but it was the flowers which were of the most interest. The seedling carried two arching spikes with 9 and 10 flowers very well spaced respectively. The flowers carried three colours, being pink and white which is the actual variegation and the true colour of pale yellow. The lip had an eye-catching band of red.

After careful study of this plant I have come to the conclusion that the variegation is a genetically stable trait being carried in every single leaf and being constant in pattern, as with the flowers. I have discovered in J.N. Rentoul's book of 'Growing Orchids', that the species *C. lowianum* had a rare form which was also variegated. Upon studying *C. Wallara* 'Gold Nugget's pedigree, I discovered that *C. lowianum* is in its background. This seedling which I have named 'Touch of Class' has leaves similar to *C. Wallara* but the spike habit and flower resemble *C. Chocolada*. *C. Chocolada's* parentage is *C. Hamsey* x *C. Zuma Boyd* and I assume that *C.*



*Cym.* 'Touch of Class' as a small seedling.

*lowianum* is in the background, probably through *C. Zuma Boyd*.

I have made some preliminary enquiries as to the frequency of occurrence of this type of orchid. I was informed that it is a fairly common event but from what I have determined, these so-called 'variegations' appear to be in the most part, aberrations in the flasking process whereas a named variety shows distinctive striping of the leaves. I have seen some plants of this and they all displayed inconsistencies which led me to believe that in their cases, the variegations were not stable in nature and therefore unlikely to be passed on in the breeding process. Much the same applies with cymbidiums with peloric lip markings, which are actual mutations, with this also being unlikely to be passed on in breeding to my knowledge.

Of the few variegated types I have seen I have been advised that on one clone, it did not reproduce in the re-mericlone process. Of the others, the variegation differed from leaf to leaf and in one which was similar to mine the variegation was only carried in some leaves and the bloom was of the normal colour.

I am of the opinion that my clone, being a new hybrid seedling which has carried the variegation from the beginning, is much rarer in type than I have been led to believe. The variegation in the leaves and bloom is not outstandingly eye-catching but I feel that if I am right and the

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variegation is a genetically fixed trait in this special hybrid, then there is every likelihood that it will pass this feature on to a greater or lesser degree in some of its offspring. The new avenue in breeding that I have been looking for is perhaps now available in this rather special new clone.

The next stage was extremely important. What to cross onto it and what to cross it onto in order to maximise its true potential. Bearing in mind that the species *C. lowianum* is probably the source of this variegation, I did some crosses to hopefully reinforce this quality. The crosses I have done this season are as follows.

*'Touch of Class' x C. (Winter Wonder x C. Coraki 4N).*

This was done to bring the vigour of the *C. Winter Wonders* into the bloodline and also to reinforce a different yellow colourline.

*'Touch of Class' x C. (Ngaire 'Kuringai' x C. Borough Green 'Conference') 2N*

A diploid seedling was used as the pollen parent to see if the tetraploidy of *'Touch of Class'* would dominate the cross with the likelihood of the variegation coming through as a strong point as compared with a straight 4N x 4N crossing. Both *C. Ngaire* and *C. Borough Green* are top parents and this seedling first flowered this year on a tiny one

Mrs Pat Greenfield

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Snow white, contrasting lip. Suitable cut flower.

Expressions of interest are sought for the proposed cloning of these superior varieties of standard cymbidium orchids.  
For further information, please write to me at the above address.

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## INTRODUCING



(Wallara 'Gold Nugget' x  
Tapestry 'Red Glory')  
'BUTTERFLY' Suspected  
4N



bulbed plant.

*'Touch of Class' x C. (Wallara x C. Tapestry 'Red Glory') 'Butterfly'*

'Butterfly' is a suspected 4N clone. It is a new seedling blooming for the first time this season and carries tall, heavy spikes with strikingly coloured brown flowers. This cross also has a double helping of C. Wallara 'Gold Nugget' in the hope of reinforcing the variegation.

Reverse crossing are as follows:

*C. Wyanga 'Elanora' 4N x 'Touch of Class' 4N*

This could turn out to be a very interesting cross if successful because C. Wyanga has the albino form of C. lowianum in its bloodlines. Combined with the rare variegated form of C. lowianum which appears to have come forward in my seedling, the resultant seedlings could offer new breeding bloodlines with hopefully some variegated seedlings in the pure-colour line as well as the standard colour-line.

*C. Te Puna 'Yellow Delight' x 'Touch of Class'*

This was done to bring into the bloodlines the colour yellow from a different source and also the rounded segments so desired from the C. Rincon line of breeding.

*C. (Puppylove 'Jubilee' x C. Winter Wonder) 'Ruby Lip' x 'Touch of Class'*

'Ruby Lip' is a snow white seedling with a heavily marked ruby lip. This bloodline introduces the excellent breeding qualities of both C. Puppylove and C. Winter Wonder.

As can be seen with above crosses, most of the best colour-lines have been represented with the exception of pink. If the pods reach maturity it will be interesting to see if the variegation will be passed on in any or all of the crosses.

These crosses will not be available for sale for they represent what will I hope be first generation crosses in a new line of breeding. I am interested however, in hearing from anyone, commercial grower or amateur breeder who may have a similar type orchid seedling in their collection which they may wish to exchange pollen.

It is only true variegated and stable hybrids I am interested in, not clones which have sported from original standard coloured plants, nor orchids with peloric markings. Information and photographs which would be returned would be welcome. Surely there must be like seedlings out there from different bloodlines which if united could reinforce the variegation factor.

Alternatively I welcome comments and information from any interested party. ■

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# Friends Through Orchids

by Neville H. De La Rue.

It has been my desire ever since I started growing orchids to learn more about orchids and in particular what conditions a particular orchid needs to thrive, producing the best floral crown. Many times I have had to stand by and watch an orchid die, not knowing what conditions it needed.

I have found books frustrating from the culture side, although over the years recognised standards have been formed for the description of plants and their flowers, no world standards are in use for measuring light, moisture in a pot, air movement or temperature movement. Those things so important for the culture of these plants.

There are few articles or books around that go into the variations in cultural conditions necessary to bring out the best in our plants. One book which was published years ago was 'A CULTURAL TABLE OF ORCHIDACEOUS PLANTS' by J. Murray Cox' but that has been out of print for years and new growers won't have heard about it let alone be able to obtain a copy. One recent exception to this is Wal Upton's new book 'Dendrobium Orchids Of Australia' in which he gives many of the variations in culture necessary to get the best out of the plants many of us are privileged to cultivate. Much of this is only duplication of what nature provides and what the orchids have adapted to, but how many times have you looked up a reference, only to find the information saying, 'this orchid is found in Columbia, Mexico or even Australia' with no reference to any climatic variation. We know how much variation there is in Australia and even here it is hard enough to find out things like, "the plant grows in full sun" (whatever that means) or "over hanging a mountain stream".

Even if we are very well versed in all nature's quirks, they do not always transpose equally to domestic culture. There have been orchids grown right across Australia in small and large collections that have reached near perfection but of which we know so little.

I was excited to read an outstanding article a few years ago by Bill Johnson 'A SIMPLE LIQUID NUTRITIONAL PROGRAMME

FOR ORCHIDS' (Australian Orchid Review, Sept. 1984) only to find in following issues he was all but tared and feathered for describing what he had found worked for him in terms we orchid growers understood and have now become standard practice in many collections. In being able to see first hand the many innovations going on in orchid culture, right across Australia, will help two ways. Firstly it is hard to criticise someone for what they have seen for themselves and then put into practice. Secondly, being able to share and discuss with others what we are doing gives a broader base for our conclusions.

It is my proposal therefore to set up a register of all orchid growers across Australia, including nurseries and Societies. This will allow more people to get to know a wider range of growers than exists in their own so-

ciety. When it comes to holiday time orchid growers could be visited all along the way. This I am sure will help increase the knowledge of orchid culture, as a picture speaks a thousand words, seeing something in the flesh would speak a thousand times more.

Those interested will be asked to fill in a questionnaire with only the information they wish being published. If they would like people to ring before calling, then only their phone number needs be published. As a register of orchid growers across Australia it could be used by commercial nurseries or societies to circulate information. This will be covered by the questionnaire and those not wanting their names circulated will be excluded.

The directory will be widely advertised with growers invited to send for a questionnaire which they will complete and return with \$2.00 to cover

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10 Parkhurst St., Wagga N.S.W. 2650

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costs. In return they will receive a copy of the directory. Societies will be offered free inclusion if they organise the return of 10 questionnaires plus costs, otherwise the \$2.00 cost will apply. Entries for nurseries will also be \$2.00 for inclusion in this section as separate from individual growers.

This directory will also be advertised overseas, not for contributors, but if anyone is coming to Australia they will be supplied with a list of growers, societies and nurseries who they could visit or contact.

Another area in which I hope this will help is the communications between special interest groups. Have you ever thought you would like to join or get information from a Species Society, were you aware there were Species Societies? By looking up the directory you could find the areas of information required as there will be a section in the directory for these groups and other societies to record their contact person or address.

It is the first hope of this directory that many long and enjoyable friendships will be formed and many comparisons of culture methods discussed and evaluated. It could even be a way of keeping in touch with people you once knew and who have moved.

It is also hoped that this will even eventuate in more informative articles in news letters and publications. It will even be possible to send copies of local news letters to other societies so that interesting articles can be published in their news letters, wouldn't this make the job of editor easier. With the wider circulation it would increase the accuracy of information and add to the variety of material as these became a forum for discussion.

It is hoped an interim directory will be ready for the Christmas holidays with the first full directory ready mid 1990. We look forward to this great adventure with anticipation and hope it will bring more enjoyment to orchid growers everywhere. 

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# Orchid Dalliance Weekend

by Peter Head

**T**he North Moreton Qld. Orchid Council Inc. is holding an Orchid Dalliance in Brisbane during the May Day holiday weekend 5th, 6th, 7th May 1990, and you are invited to join us.

The programme for this Weekend Spectacular has been developed to cater for a maximum of 350 Registrants who will be treated to 2 days of "Leisure among Orchids and Orchid growers" including such things as Private Bush House visits, Commercial Grower displays, a Saturday night Dinner Dance, a spectacular Quality Plant Auction, and a Sunday afternoon Barbeque.

Members of the 11 Orchid Societies which comprise the North Moreton Qld. Orchid Council, look forward to providing Orchid Lovers from far and wide, with an enjoyable weekend surrounded by good old fashioned hospitality, at a sensible and affordable cost to all participants.

The North Moreton Qld. Orchid Council was formed 5 years ago to cater for the needs of Societies in the northern suburbs of Brisbane, generally in an area north of the river and south of Caboolture. It can boast a track record of strong democratic leadership, with positive action and innovation. This time however, Rockhampton Orchid Society has already shown the way, having previously hosted several such events, on a 2 yearly timetable, the results of which have been quite excellent. We believe that a similar type of Orchid get-together will round off the annual timetable, and therefore it is hoped that North Moreton will in future, continue to organise a Dalliance Weekend, in the alternate year to Rockhampton. On occasions such as this, it's great to catch up with old friends, make some new friends, learn something new about Orchids, perhaps buy the odd plant you have been looking for, Badge collectors can snap up a limited edition being specially struck for this Dalliance, and generally just relax with your hobby among friends.

This Weekend Spectacular will pack Orchids into your vision at every turn.

Visits to private collections will highlight a wide variety of Orchid genera, however at this time of the year you will be dazzled by an excellent range of phalaenanthes Dendrobiums. We believe that Brisbane has some of the best around! — You be the judge!

The Maximum Registrations number of 350, cannot be extended. General Registration fees are \$45.00 per person up to 31st March 1990, and \$50.00 after that time. Groups of people arriving on coaches will have a separate schedule of fees. The message is **Book Early**. The Sunday afternoon Spit Roast B.B.Q. will be available as an optional extra, and will cost just \$9.00 per person. All will be welcome. Programmes and Registration Forms are available for the asking, either by phoning the Registrar, or writing to the address below.

Make sure you're a part of the



*Slc Hazel Boyd 'Apricot Glow'*

inaugural North Moreton Orchid Dalliance. **Registrations and enquiries should be directed to:** North Moreton Orchid Dalliance, 337 Trouts Road, McDowall, Qld. 4053. Or phone (07) 353 3195.

## Report on 25th Anniversary of Mt Gambier and District Orchid Society

In this year when the O.C.S.A. is celebrating its Golden Anniversary the Mount Gambier Society is celebrating its Silver Anniversary.

The inaugural meeting was held on June 16th, 1964 at the South Australian Hotel, Mt Gambier. Thirteen persons attended the meeting which elected Mr W. Hunter President, Miss Mavis Franklin Secretary, Mr R.S. Perry Assistant Secretary/Treasurer and three others as Committee members. The Committee met on June 30th to draw up a Constitution, based on that of the Newcastle Society which was Mr Hunter's home Society before moving to Mt Gambier. Subscriptions were set at 12/6 for a husband and wife, 10/- for a single member, and 5/- for a junior member under 18 years.

Shortly after this letter was received from Mr Syd Monkhouse congratulating the Society on its formation, and offering the assistance of the O.C.S.A. by affiliation. We thus became the first

affiliated society from outside Adelaide.

Our June meeting held on 26th was a celebration of our 25th Anniversary with a cake, decorated with two Cattleyas in cameo style by our Secretary Mrs Mary Gill. Members were invited to bring a plate of supper.

Coincidentally the speaker — on Paphiopedilums — was Mr W Hunter, who rejoined the society a couple of years ago, and who is currently a committee member.

In the last two Newsletters, our editor Miss Mavis Franklin has outlined the formative years of the society, and listed the highlights of the past 25 years which are reproduced here.

\* The first meeting in the South Australian Hotel when the society was formed on June 16th, 1964.

\* The Society's affiliation with the O.C.S.A. in the same year, and the first non metropolitan Society to do so.



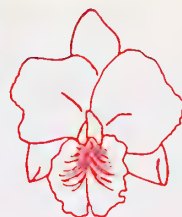


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- Sic. Tangerine Jewel 'Vi' x Soph. coccinea cool growing
- (Lc. Scarlet Imp x Sic. Naomi Kerns) x Sic. Kauai Starbright cool growing
- Sic. Hazel Boyd #50 x Bc. Alicia Golden Dawn cool growing
- Sl. Orpetii 'Shonan' x Sic. Tangerine Jewel 'Vi' cool growing
  - Epi. Bees Knees x Epi. gracilis cool growing
  - Epi. cochleatum x Epi. Bees Knees cool growing
  - Epi. cochleatum x Epi. tampense cool growing
- C. Summer Stars 'May' x C. Highlight 'Angel Wings'
  - Lc. Elaine Napper x Lc. Little Susie 'Osborne'
- C. Horace 'Maxima' x Bc. Pamela Hetherington 'Coronation'
- Lc. Persepolis 'Splendor' x Bc. Wakiki Sunset 'Brightest Orange'
  - Lc. Scarlet Imp 'Irene' x Lc. Waikiki Sunset 'Kadaoka'
- C. (Peach Cobbler x Brabantiai) x C. Green River 'Stardust'
- C. Chocolate Drop x (Bc. Sunset Bay x C. Chocolate Drop)
- C. Brabantiai x (C. Vaupes Sunrise x gutatta) 'Red'
- C. venosa x C. granulosa — for green primary hybrids
- Bc. Greenheart 'Fantasy' x Bc. Trojan Gold 'Rose Marie'
  - C. velutina x C. Penny Kuroda 'Spots'
- Lc. Scarlet Imp 'Irene' x Lc. Amberglow 'Magnificent'
  - Bc. Sylvia Fry 'Wallacia' x self
- Bc. Yellow Ball 'Sunshine' x Bc. Sylvia Fry 'Wallacia'

##### OTHER GENERA

- Den. White Maiden x (Doreen 'Kamiya' x bicolor) white
- Den. Esther Furriagel x Hickam Deb selfed purple
- Den. Pauline x canaliculatum — curly & perky antelopes
- Den. teretifolium x aemulum — unusual native hybrid
  - Sarc. falcatus x Sarc. hartmannii = Melba
  - Sarc. fitzgeraldii x Sarc. hartmannii = Fitzhart
  - Onc. ornithorhynchum x barbatum
  - Miltassia Charles M. Fitch — remake
  - Encyclia tampense x tampense

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- P. Sarah Loeb x P. Romance 'Sweet Lisa' SM/JOGA
- P. (Doris Wells — Zauberrose x Comanche Rose) x Lippestern 'Longlife'
- P. (Lippestadt x Arai) 'Pink Totem' x (White Maiden x Mariposang Puti)
- P. Lippeglut 'Pink Formal' x P. Romance 'Sweet Lisa' SM/JOGA
- P. Spring Doris x P. Romance 'Sweet Lisa' SM/JOGA

##### White Strain

- P. Texas Thunder x P. (Mount Kaala x Joseph Hampton)
- P. Dawn Hunter x P. Gladys Read 'Snow Queen' AM/AOS
- P. Blanca Grande x P. Dawn Hunter
- P. Yukimai #2 x Dtps. Double Trouble
- P. Hakalau Clouds x P. Hatsuyuki 'Blumen Insel'
- P. Winter Kaala x P. (Hamaoka x Mariposang Puti)
- Dtps. Odoriko #102 x Phal. Gentle Thoughts — red lip
- P. Malibu Exotic x P. Lip Service — red lip
- (P. Pamela Wolf x Dtps. Jason Beard) x P. Wishing Well 'Blumen Insel'

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  - P. Dawn Hunter x P. Blanca Grande
- P. Musashino x P. (Hamaoka x Mariposang Puti)
- P. Joseph Hampton 'Diane' x P. (Joseph Hampton x Muriel Turner)
- P. Texas Thunder x P. (Mount Kaala x Joseph Hampton)
- P. (Mount Kaala x Joseph Hampton) x Himeshirayuki
  - P. Georgia Remaly x P. Blanca Grande
  - P. Ibis x P. Mariposang Puti
- P. Dawn Hunter x P. Gladys Read 'Snow Queen'
  - P. Zada Kaala x P. Lippeglut — pink
- P. Sarah Loeb x P. Romance 'Sweet Lisa' — pink
- P. California Glow x P. Romance 'Sweet Lisa' — pink
- P. Spring Doris x P. Romance 'Sweet Lisa' — pink
- Dtps. Odoriko #102 x P. Gentle Thoughts white, red lip
- Dtps. Odoriko 'Nishi Tzu' x P. Ace white, red lip

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- \* The exhibition in the City Hall in 1966 when our late Patron Mr Merv Green, brought as many flowering Cymbidiums as fitted into his car for a special display.
- \* The First Workshop conducted by Mr Syd Monkhouse at the South East Community College, followed some years later by another at St Martin's Church Hall, also conducted by Mr Monkhouse.
- \* The many visits, mostly to our Christmas meetings, by Mr & Mrs Green. They always brought a magnificent plant to show us and told us how they cared for it. Their friendliness and genuine interest in our Society will never be forgotten by those of us who knew them.
- \* The four visits as guest speaker by the late Mr Russell Martin and later a similar visit by his daughter, Jane, who gave "tons" of information on growing orchids, especially Cymbidiums and other cool growers.
- \* Bestowal of the first Life Membership on Miss Mavis Franklin in recognition of 20 years as Secretary, and for general services to the Society.
- \* Several years later when as the only Life Member, Mavis Franklin had the honour of presenting Life Membership certificates to Mr Wayne Gill, who had been President, Treasurer, and Vice President, and Mr James Shaughnessy who had been Secretary, Publicity Officer, and Program Organizer.
- \* Those fine massed displays of Cymbidiums the Society staged in the UFS Chemist Shop when Wayne was manager, and later the beautiful garden setting exhibitions held in SE Land Home Centre, and last year's Shows in the Lakes Plaza.
- \* The arrival in Mt Gambier of Wayne Gill in 1973 and his immediate interest in the Society. Wayne was President of the South Australian Orchidaceous Society in Adelaide immediately before moving to Mt Gambier. His extensive knowledge of orchids and their botany coupled with his organizing ability have been of immense value ever since.
- \* Our Society's success in winning its section in the Orchids '86 Show held during the year of S.A.'s 150th Anniversary.
- \* Holding our first Winter Show last year.
- \* Membership at the first meeting was 18 and, at the last count, 48. It has exceeded 50 at times.
- \* The Meeting held in the home of Mavis Franklin in January 1976

when the Society seemed to have reached rock bottom and was revived with the enthusiasm of new members.

- \* When at that meeting Mr Merv Green said, "You must have a news bulletin to keep members in touch with what is going on." Mavis Franklin who was then Secretary was appointed editor and the first Newsletter was published the next month. The Latest Newsletter is the 125th edition and is in its 13th year of publication.
- \* The Seminar/Workshop held two years ago when speakers from Victoria were Clive Halls, John Scott and Snow Peterson. Attend-

ance exceeded 50 with many visitors coming from Western Victoria.

- \* The Seminar/Workshop held in May 1989 when speakers were Deane Johnston, Clive Halls (Society Patron), Peter Chiles, Kel Staples, and James Shaughnessy filling in at short notice. This time Murray Bridge and Millicent provided registrants.

The last 25 years has passed speedily with its highs and lows, and we look forward with enthusiasm to the next 25 with hopes of many more highs than lows.

**Wayne Gill**  
*Liaison officer  
for all publications*

## Cairns to host T.Q.O.C. Silver Jubilee

By Les Gliddon

Not many conferences are held in this country of ours where in June you can move around in a short sleeved shirt and a pair of shorts without feeling the cold. Well in 1990, there is just such a one to be held. The Silver Jubilee Tropical Queensland Orchid Council Conference is to be held in Cairns from the 9th to 11th June, 1990, being hosted by the North Queensland Orchid Society, Cairns.

With a population of almost one hundred thousand, Cairns is highly geared towards tourism and boasts everything from 5 star accommodation to Backpackers Hostels. In the surrounding countryside are many and varied scenic attractions. Rolling Tablelands, Crater Lakes, pure white sandy beaches, spectacular coral reef within 20 miles of the coast and National Parks with crystal clear freshwater streams running through them where you can walk along tracks, and see all the native orchids growing in their natural habitat. Average temperature in June is 18° at night and 28° in the daytime.

There are at least four commercial orchid nurseries in the area with many more semi-commercial growers, plus many many more private collections. Field trips are being organised for both the Saturday and Sunday to many collections. The venue for the conference is well suited for this type of activity, with full facilities for lectures. Lectures will be on the Saturday morning, with some very notable speakers, while the judging of the Orchid Show will take place on Saturday afternoon. Saturday night will be filled with a sumptuous dinner and dancing.

There is also a strong possibility that the first annual general meeting of

the newly formed "Orchid Council Queensland" will be held in conjunction with this conference.

Conferences are a time to renew old friendships and make new ones. Bookings are already starting to come in. Why not put Cairns on your itinerary for next year in June. Come to sunny North Queensland and enjoy the leisurely lifestyle and the warm hospitality of its people. I am sure you will not be disappointed.

For more details contact the Conference Secretary, P.O. Box 1024, Cairns 4870.



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# Small growing Cattleyas

Of recent times the trend in some *Cattleya* growing countries and especially the U.S.A. and Japan has been to produce plants which are loosely called miniatures.

Some internationally known nurseries deal almost exclusively in small growing Cattleyas. Many growers call almost any plant in the *Cattleya* alliance which does not grow taller than approximately 22.5 cm (nine inches) a miniature. The specialists who grow these small growing Cattleyas have subdivided them into three categories namely:—

- (a) Micro mini's
- (b) Miniatures
- (c) Compact

The interest in these small growing Cattleyas has brought about a whole new sphere in orchid growing. This new era was brought about principally in parts of the U.S.A. and Japan

because of economic reasons associated with providing heat for the plants to grow in the cold temperatures, and the fact that two or three times more plants can be grown in a given area. Many of these small growing plants have added advantages of blooming several times a year, something which very few of the large growing *Cattleya* alliance plants do.

Perhaps another reason for the emergence in popularity of these plants is that some hybridizers felt that the ultimate goals had been reached in the production of the large purple Cattleyas e.g. *Blc* Lucky Strike, *Blc* Mem Crispin Rosales etc. and similarly the whites e.g. *C.* Princess Bells, *Bc* Donna Kimura etc. By diverting their attention from the large growing plants to small growing plants they had a whole new field in which to work and no doubt open up a whole

new market for their plants.

Small growing *Cattleya* alliance plants have existed for many years and indeed many species fall into the small growing group, e.g. *C. luteola*, *C. walkeriana*, *L. briegei*, *L. rupestris*, *Soph. coccinea* and *Soph. cernua*. By remaking many of the early hybrids using better forms of the parent plants much better blooms are being produced, e.g. *Sl* Orpetti (*L. pumila* X *Soph. coccinea*) was first registered in 1901. Much improved blooms are now being produced from plants which have been bred recently to the blooms produced by the early plants of *Sl* Orpetti.

A few other plants which have been used extensively in breeding programmes to breed small growing Cattleyas of recent times are *Soph. coccinea*, *Soph. brevipedunculata*, *L. milleri*, *L. pumila*, *C. aclandiae*, *C. luteola*, *C.*



*B. nodosa* x *L. milleri*



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*walkeriana* and *Bro. sanguinea*. At times some startling and unexpected results have been achieved, for instance it has been found that if the species *Laelia briegeri*, a small yellow flower, is crossed onto a dark purple or red coloured flower then often the results are candy stripe blooms, e.g. *Slc* Orglade's Early Harvest 'Magic', (*Slc* Hazel Boyd X *L. briegeri*) apparently one of the red *Slc* Hazel Boyd's must have been used as a parent.

The definition of small growing Cattleyas refers to the size of the plant and not to the size of the bloom. Some tall growing *Cattleya* species e.g. *C. guttata* and *C. bowringiana* produce clusters of small blooms but of course do not fall within the definition of small growing Cattleyas.

### Micro Mini's

The Micro Mini's are plants which grow from 4 cm to 15 cm (two to six inches) tall. Measurements are taken from the top of the rhizome to the top of the leaves of the plant. This group consists mainly of plants bred from the *Sophranitis* group which include *Soph. acunae*, *Soph. brevipedunculata*, *Soph. cernua* and the best known member of the *Sophranitis* family, *Soph. coccinea*. These four species are all very small growers and all produce blooms which are in the orange to red colour range.

The hybrids *Sc* Beaufort (*Soph. coccinea* X *C. luteola*) and *Slc* Tangerine Jewel (*Slc* Little Beamche X *Soph. coccinea*) are becoming popular and well known. Both are very small growers and at present there are a number of mericlones of *Sc* Beaufort available, some being 'Elmwood' and 'Elmwood sub variety O.C.' which are both yellow and the cultivar 'South River' which is an orange coloured bloom. *Slc* Tangerine Jewel 'Vi' is a brilliant orange colour and flowers several times a year. If you are interested in small growers then *Slc* Tangerine Jewel 'Vi' is a must to be on your shopping list. Other varieties (or cultivars) of *Slc* Tangerine Jewel range in colour from red to yellow.

Many of these micro mini Cattleyas flower in pots of 50 mm to 65 mm (two to two and a half inches) in size, a couple by way of example being (*Lc* Pink Favorite X *Slc* Precious Stones) and (*Sl* Orpetti X *Sl* Psyche). Herein lies another area of controversy, what price does one pay for a plant in a two inch pot in flower. Do you pay the price which you do for a normal flowering sized plant or do you as some wish to do pay the cost of a usual 50 mm pot. I feel the answer is somewhere in between the two.





*C. bowringiana* x Little Angel

#### Miniatures

The Miniatures are plants which grow from 15 cm to 20 cm (six to eight inches) tall. This group includes species such as *C. walkeriana*, *C. schilleriana* and *C. aelandiae*. *C. walkeriana* has come to prominence since the interest in small growing Cattleyas has commenced. There are three colour forms of *C. walkeriana*, namely, the lavender form which is the best known, the semi alba form (white with a coloured lip), and the alba (white) form. The white form has been widely used recently in an effort to breed colours other than lavender. Perhaps the best known white form is *C. walkeriana alba* 'Pendentive'. *Lc Mini Purple* (*C. walkeriana* X *L. pumila*) is a well known miniature. Other hybrids in the miniature group include *Sc Carol Lynn* 'Nakabayashi' (*C. walkeriana* X *Soph. coccinea*), *Sl Psyche* (*Soph. coccinea* X *L. cinnabarina*), *Sc Batemanniana* (*Soph. coccinea* X *C. intermedia*), *Slc Little Hazel* (*Sl Psyche* X *Slc Hazel Boyd*), and *Lc Pink Favorite* (*L. Milleri* X *C. walkeriana*).

#### Compacts

The Compact group are plants which grow from 20 cm to 30 cm (eight to twelve inches) tall. This

group has now become very popular and many of the more sought after plants of today are contained in this group, e.g. *Slc Hazel Boyd* (*Slc California Apricot* X *Slc Jewel Box*), *Slc Madge Fordyce* (*Sc Doris* X *Slc Jewel Box*) and *Slc Dixie Jewels* (*Slc Madge Fordyce* X *C. aelandiae*).

Because there are so many plants today which fall into the small growing *Cattleya* group we tend to think that they must be easily bred. This definitely has not always been the case. A success rate of about ten per cent was the average for *Broughtonia* crosses not many years ago and when one considers the number of *Cattleytonia* and *Cattleytonia* alliance crosses which are in existence today then there must have been many disappointments in breeding programmes in the past.

Frank Fordyce has written that he attempted to breed with the red blooming *Slc Falcon* 'Westonbirt' on over one hundred occasions before he succeeded. Similarly he related that *Slc Dixie Jewels* was bred out of sheer frustration. He had been unable to get viable seed from *Slc Madge Fordyce* and because *C. aelandiae* readily gave seed he crosses *C. aelandiae* with *Slc Madge Fordyce* and so bred *Slc Dixie*



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*Sl. Marriottiana*

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On examining the parents of many of the small growing Cattleyas we soon realize that *Soph. coccinea* has been a favourite with the hybridizers, e.g. *Sl Jinn* (*Soph. coccinea* X *L. milleri*), *Sl Psyche* (*Soph. coccinea* X *L. cinnabarina*), *Sc Doris* (*Soph. coccinea* X *C. dowiana*), *Soph Arizona* (*Soph. coccinea* X *Soph. brevipedunculata*) to mention but a very few. *Sophronitis coccinea*'s progeny are usually red, orange or pink in colour.

Let us now have a look at some of the better known small growing Cattleyas.

*Sl Psyche* (*Soph. coccinea* X *L. cinnabarina*) the cultivar 'China' is the one usually offered for sale in catalogues. It is a deep orange-red colour. It is a parent of *Slc Little Hazel* (*Sl Psyche* X *Slc Hazel Boyd*) and is frequently used in breeding.

*Sc Doris* (*Soph. coccinea* X *C. dowiana*) is a small grower which produces red to orange coloured flowers. It is perhaps best known as a parent of *Slc Madge Fordyce*, (*Sc Doris* X *Slc Jewel Box*).

*Slc Yellow Doll* (*C. luteola* X *Sl Psyche*) the cultivar 'Mitzi' is the one we see offered for sale, it is a bright yellow in colour.

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*Slc Pixie Pearls* (*Slc Bauble* X *Slc Milzac*) there are two cultivars presently available, the cultivar 'Apricot Drop' is a yellow-orange with a red lip and is similar in appearance to some of the similar coloured *Slc Hazel Boyd*'s, the cultivar 'Lea' is a reddish purple in colour and the ones I have seen are much smaller in size than 'Apricot Drop'.

*Slc Hazel Boyd* (*Slc California Apricot* X *Slc Jewel Box*). This must be the most successful hybrid ever produced. There are so many cultivars available that a book itself is needed to discuss this hybrid. They range in colour from yellow to red and some have splashed petals. *Slc Hazel Boyd* is considered a yardstick with which to compare other small growing *Cattleyas* and very few can compare with it.

*Sc Batemanniana* (*Soph coccinea* X *C. intermedia*) there are several cultivars of this plant available, some being 'Hawaii', 'Lea', 'Sugar Plum' and 'Good Hope'. This plant produces an unusual flower usually pale pink with dark pink and white stripes and also has splashes in the petals.

*Sc Carol Lynn* (*C. walkeriana* X *Soph. coccinea*) the cultivar Nakabayashi is the one we see usually offered for sale. It is a very small grower and

has a purple flower with a yellow throat.

*Lc Pink Favorite* (*L. milleri* X *C. walkeriana*) the cultivars 'Hawaii' and 'Tokyo' are the best known. This plant produces a purple flower with some yellow in the throat. *Lc Pink Favorite* is popular with the hybridizers who produce the small growing *Cattleyas*.

*C. Small World* (*C. luteola* X *C. aelandiae*) is one you see in books showing *Cattleya* flowers and this one makes your mouth water. I have not seen it or plants of it advertised. Photographs show it as a greenish colour with brownish spots and a purple lip.

*Blc Waikiki Gold* (*Blc Pink Surprise* X *C. forbesii*) there are three well known cultivars available, these being 'Lea', 'Uno' and 'Fumi'. I have only seen 'Lea' in bloom. It is a pretty yellow in colour with a pink fringe around the edge of the lip. My plant of *Blc Waikiki Gold* 'Lea' tends to vary greatly from blooming to blooming, (as many plants do), and when it blooms at its best it is a top bloom but on other occasions is only ordinary.

*Lcna Peggy San* (*Lc Peggy Huffman* X *Bro sanguinea*) the only cultivar I have seen in bloom is 'Cynosure'. This hybrid is a spashed petal *Broughtonia* hybrid. It is a purple

colour with white splashes in the end of the petals. These plants commence flowering in 65 mm (two and a half inch) pots. Flowering size plants of this hybrid are offered for sale now but are rather expensive at present.

*Slc Bellicent* (*Lc Bonanza* X *Soph. coccinea*) the cultivar 'Dark Mischief' is the one usually offered for sale. It is said to be a dark rose colour of excellent shape. This cross goes from one extreme to the other in that *Soph. coccinea* is a very small grower and *Lc Bonanza* is a large growing plant which produces a 15 cm (six inch) flower.

*Slc Marriottiana* (*L. flava* X *Soph. coccinea*) I have not seen a mericlone of this plant offered for sale and the only one I have seen in bloom is a pretty golden yellow which is heavily marked with an overlay of red. This is a micro mini with blooms of a full shape which are about 2.5 cm (one inch) in size.

*Slc Tangerine Imp* (*Slc Tangerine Jewel* X *L. luteola*) I have not seen mericlones of this plant advertised for sale as yet. I have flowered several seedlings of this hybrid and they have been yellow, orange and red in colour. They are very small growers similar in growth and size to *Slc Tangerine Jewel*.



*Soph. grandiflorum*



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I have not discussed the *Cattleytonia* hybrids because they are so numerous that they require a separate discussion themselves but it is suffice to say at this time that the majority of the *Cattleytonia* plants look alike as do the blooms with a few notable exceptions such as *Ctna* Brandi, (*Ctna* Keith Roth X *Ctna* Rosy Jewel) and *Ctna* Rosy Jewel (*C. bowringiana* X *Bro. sanguinea*).

The plants mentioned above are but just the tip of the iceberg in the newest area of *Cattleya* alliance hybridizing. Like all other areas of orchid growing be prepared for more disappointments than successes when your seedlings commence to bloom.

There is no recipe which enables us to obtain seedlings which will give the sought after results everytime when the seedlings bloom with perhaps the exception of buying mericlones of plants which you have seen in flower and which you consider are your type of orchid. One way towards avoiding some of the disappointment but by no means fool proof is to buy plants bred from parents which have shown the results you desire in either themselves or in other hybrids produced by them.

In this regard from the above listed plants we see that plants such as *Sophranitis coccinea*, *Laelia milleri*, *Laelia briergeri*, *Laelia pumila*, *Cattleya aelandiae*, *Cattleya luteola*, *Cattleya walkeriana* and *Broughtonia sanguinea* in the species and hybrids such as *Slc* Tangerine Jewel, *Slc* Little Beamche, *Slc* Jewel Box and *Slc* Hazel Boyd to name but just a few have all produced hybrids having desirable characteristics.

No doubt we are going to see and hear much more about these 'Small growers' and there is no doubt that they are very eye catching and beautiful. I still think that in the area where I live I am fortunate in that I enjoy the best of both worlds in that whilst still being able to grow the large growing *Cattleyas* I am also able to experiment with the small growers. I am not forced to concentrate exclusively on the small growers because of the costs associated with providing heat to enable the plants to grow and bloom.

Good growing.

**Ray Smith, 185 Bayswater Road,  
Currajong, 4812. Townsville,  
Queensland.**



# T.A.P.S. wide membership

TAPS, the Australian Paphiopedilum Society now has members in all States of Australia and New Zealand, the United Kingdom, West Germany and the U.S.A.

Membership has climbed to about two hundred and new members are joining at the rate of about two every month.

TAPS arose from discussions among "paphfreaks" in Brisbane who wanted to know more about their favourites and to promote wider general interest in them.

The Society got under way at a meeting in Harry Greave's home in March, 1988.

Right from the start, the response was good with large and small growers of slippers lending their weight to the new club in the difficult early days.

Now TAPS, according to the President, Harry Greaves, is the only functioning specialist society for slipper growers in the world. There are other societies which are similar in some ways, but they include cymbidiums as well as slippers or meet only infrequently.

TAPS is for slipper growers exclusively.

To some growers it may seem ironic that Brisbane should emerge as the headquarters for TAPS as areas like Sydney and Melbourne have a longer established record of slipper growing, particularly the complex or exhibition types. But some fine collections of top exhibition paphs are being built around Brisbane and the climate is ideal for many of the species and primary hybrids.

As many as one hundred and twenty plants in bloom are tabled at monthly meetings of TAPS.

The common bond among members, though, apart from the fanatic interest that paph growing generates, is the TAPS bulletin published quarterly under the able editorship of Kev. Cooper. In this, the Australian and overseas members get their say and keep in touch with one another.

Highlights of last year's activities were special addresses by Norita Hasegawa of Paphanatics in the U.S. and Dr. Philip Cribb of Kew Gardens.

A special all slipper display was also mounted at Orchid Expo, Caloundra.

This year's elections saw only minor changes. The new committee of Management is President, Harry Greaves; Vice Presidents - Ray Hill and Barry Scriven; Treasurer - Doug Wanka; Secretary - Lyn Grubb; Editor - Kev Cooper and Committee members - Murray Ferguson, Ray Dallman, Fay Wheeler, Noel Donnelly, Eric Locke and Kath Hill.

Amongst the projects held during the year were special displays at the Adelaide and Toowoomba conventions.

Anyone interested in further information about TAPS should contact the Hon. Secretary, Lyn Grubb, 34 Warren Crescent, Deception Bay, Queensland, 4508.

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## BOOK REVIEW

### *Native Orchids of Australia*

David L. Jones

Publishers Reed Books Pty. Ltd.

656p Hardback: RRP \$69.95

Distributed throughout Australia  
by Gordon and Gotch Ltd.

This book written in three sections, is an extremely good reference book covering all Australian native orchids throughout the Continent and Tasmania.

Section I covers, in separate chapters an Introduction to Native Orchids, structure, biology, cultivation of epiphytes, cultivation of terrestrials and propagation, from seed in flasks and symbiotic germination to vegetat-

ive reproduction of terrestrials and epiphytes.

Many simple techniques are given in this section for the simplifying of the cultivation of Australian Native Orchids.

Section II covers the terrestrial orchids as a single genus or as a genera which are closely related, the rainforest terrestrials or those orchids grouped together because of their differences in morphology.

Section III covers the epiphytes in detail with the genus *Dendrobium* taking up a major part of this section.

A very interesting part of the text is the literal meaning of the generic and specific name. Although only a very



*Caladenia lobata*.

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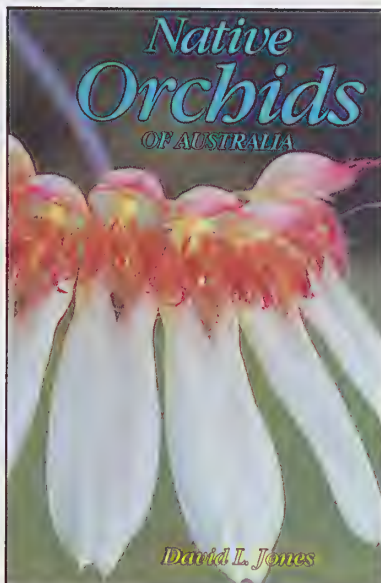
**89  
Spring  
Catalogue  
SALE ENDS  
20th JAN. 1990**

small part this gives orchid growers  
and others an insight into how and  
why a scientific name is derived.

The supplement contains species  
which have been recently discovered  
and name changes to existing species.  
These changes cannot be used at the  
present time because description in  
latin of the species have not been  
lodged.

This is an extremely good book for  
the serious native and exotic grower of  
orchids. The presentation lends it to  
being a very good reference work with  
outstanding colour photographs and  
line diagrams pertaining to many of  
the species.

Can be recommended for the book-  
shelf or society library. An extremely  
good volume at the recommended  
retail price.





## LETTERS

Dear Sir,

Please find enclosed 3 negatives of photos of *Den Esme Poulton*. This is the first time I have photographed the flower and I admit I am not an expert. With *Den Esme Poulton* is its mother plant, and you can see the difference in colour and flower shape.

Dr N. Grundon did write an article on the plant; he claimed the flower looked like a small *Den dicuphum*. I can't see the likeness myself; I don't know what plant he saw, I gave all the plants, except two, to different people around the State so they could grow them under different conditions. I have found them hard to grow and didn't like pot culture. I now have one



on cork, but the best is this plant growing on rolled up Ti Tree bark. I forgot to mention the mother plant is *Den. bigibbum* var *compactum*, and of course the male was *Den. kingianum*. I do know that some of the plants have died, but I didn't ask what culture the people used.

Thanking you,  
I remain,  
Yours faithfully,  
Bill Poulton,  
Wolfdene, Qld. 4207.

Dear Mr Wallace,

For those of your readers who may have attempted to unravel some of the names for the orchid species collected by Mr Graham Bowden and his wife while living in Papua New Guinea (Letters, AOR August 1989, page 32) it is probable that '*Dendrobium aenulas*' is *D. aemulans* of section *Calyptrochilus*; '*Dendrobium oreochairs*' must surely be *D. oreocharis* which is now a synonym of *D. subacaule*, *Dendrobium uncinatum* is now a synonym of *D. vexillarius* both of which are in section *Oxyglossum* and *Diplocaulobium hydrophilum* should read *Diplocaulobium hydrophilum*.

Some of your readers may also be interested to know that the revision of *Dendrobium* section *Oxyglossum* which was undertaken by Tom M. Reeve (Campbelltown, NSW) and myself some years ago is now in press and should be available in 1990. Further enquiries should be addressed to Mrs Norma Gregory, Publications Officer, Royal Botanic Garden. The revision has all 28 species illustrated by line drawings and all but two illustrated by colour photos. Notes on the cultivation of these attractive species are included.

Yours sincerely,  
PJB Woods,  
Royal Botanic Garden,  
Edinburgh EH3 5LR  
Scotland.

## Safety of Sphagnum

Editor:

For the second time this year I have read a warning in the *AOS Bulletin* covering the safety of using New Zealand sphagnum moss as a potting mixture. I do not believe that the average orchid hobbyist is aware of the danger of using this material. A fungus infection of the lungs is a serious matter, and these fungi resist treatment, so that a hobbyist who becomes infected may well have a serious chronic problem for the rest of his or her life. I was under the illusion that a mask and rubber gloves would be sufficient protection, particularly if the moss were pretreated with a fungicide such as Subdue. However, I have been informed by several physicians in the Providence area that this is not a wise course of action and that I should cease immediately from using this material.

I believe that the average hobbyist who knows little of these problems should be warned of the danger associated with the product. In fact, I feel that the American Orchid Society has

a moral responsibility to notify the hobbyist of this danger. A small test project could be funded to verify the findings of Dr. Isadore Rudnikoff. Such a testing program would involve a rather small outlay of money and would be of enormous assistance both to the hobbyist and to the suppliers of New Zealand sphagnum moss.

Aaron Wold  
Professor of Chemistry  
Brown University  
Providence, Rhode Island 02912  
(From September, 1989 issue  
American Orchid Society Bulletin)

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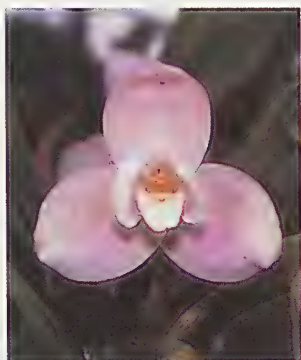
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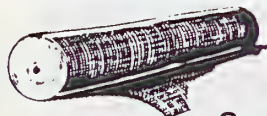
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## Melbourne Eastern Orchid Society Spring Show

Melbourne spring weather didn't deter large crowds from turning up to Melbourne Eastern Orchid Society's Spring Show, held in the Mechanics Institute, Oakleigh, from 5 to 8 October. This is the peak cymbidium flowering season in Melbourne, and the size and quality of the show reflected this. Champion Orchid of the Show was Bob Hodgins beautiful *Cymbidium Jubilation 'Geronimo'*. The same orchid was Reserve Champion for Terry Poulton, whose high quality stand won the trophy for Best Display of Orchids. There was very stiff competition for this trophy from many other excellent stands. A huge, beautifully flowered, softpink *Dendrobium Delicatum* won the trophy for the Pre-eminent Entry of the Show for Bob McHutchison, and was greatly admired by all. The verdict? A very friendly and successful show. ■

Jack Silva

## Cymbidium Club strides ahead

In May 1988 the first public meeting of the Cymbidium Club of S.A. was held: twelve months on, and I am pleased to advise that the CCSA has gone from strength to strength, it having established:—

(A) **Membership** — Currently our members total 220, increasing at the rate of 10 per month throughout 1989.

(B) **Bulletin** — Each month the Club produces a high quality bulletin, featuring photographs of plants from our monthly meetings, a stud profile, cultural tips, and news and views from growers as it occurs. Our interstate membership has blossomed due to this special focus upon this very popular genus. We are now investigating the introduction of a colour magazine for adoption in 1989.

(C) **Monthly Meetings** — Attended by 100 plus members, meetings focus upon a range of short presentations that encourage participation by all present. At each meeting a total of \$90 is provided as prize-money for the categories of Standard, Intermediate, Miniature, Seedling and Species.

(D) **Judging System** — Following a detailed review of each of the major systems throughout the world during the first half of 1989, it has been decided that a new system be adopted which incorporates all of the desirable facets of the various judging systems, plus new innovative components



Top: Terry Poulton's stand, of high quality orchids which won Best Display at the M.E.O.S. Spring Show. Above: Dave and Pat Wickam's large display at the M.E.O.S. Spring Show.

identified by our members. Details of this system can be obtained by writing to our Club.

(E) **Social Outings** — B.B.Q's following a Nursery Tour have proven to be very popular with members. It allows the opportunity for members to mix on a social basis, as well as a detailed inspection of the Commercial Nurseries in and around Adelaide.

The CCSA has made giant strides during our first 12 months, and we look forward to a fulfilling future for our members.

I would welcome further enquiries/questions about our Club. ■

Graham Guest, President, CCSA, C/-  
105 Boliver Road, Salisbury North SA  
5109.

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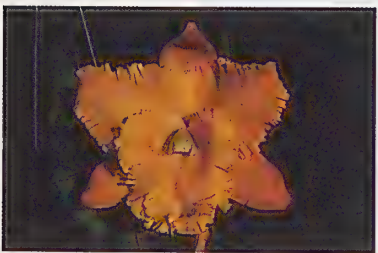
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